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ABSTRACT

This study inquired into the relationships between (1) the role school plays in preparing children for adult life and the attitudes of children, teachers, and parents toward schooling; (2) the school curriculum and children's out-of-school experiences; and (3) curriculum content and Western influences on teaching styles. This study is a followup of similar research on teaching practices and children's responses in four New York City elementary schools in socially contrasting neighborhoods (middle income black, middle income white, lower income black, and lower income white) that revealed ways in which the socializing feature of the schools hindered the educational function. In the Zambian study, running records were taken of 44 hours of classroom sessions; short interviews were conducted with 454 children; and additional interviews were obtained from 15 teachers, 195 parents, and 18 other adults. (Author/MLF)

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PRIMARY SCHOOLING IN ZAMBIA

Eleanor Burke Leacock

Polytechnic Institute Of Brooklyn
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U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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PREFACE AND ACKNOWLEDGEMENTS

In the industrializing nations of Africa, universal free public education is widely seen as the key to national development. Western educational models have great influence, and advice and assistance are sought from Western educators. Paradoxically, this coincides with a period in the West in which public schools have been coming in for particularly heavy criticism. Although often cited as the means through which a citizenry can be trained for humanistic and innovative thought, it is becoming increasingly clear that educational institutions, especially at the lower levels, have in fact acted to encourage unquestioning compliance and even bigotry.[1] And, although generally said to be an avenue for reinforcing democratic institutions through enabling equality of opportunity, the evidence grows that schools instead act in large measure to maintain the occupational heirarchy across generations.[2] The questions therefore arise: What directions are the rapidly expanding educational systems in Africa taking? And what is the nature of Western influences upon them?

Two projects which I have directed have added depth to my own views on educational problems in the West. Through a study of elementary schooling in New York City I have documented some of the processes that lead often well-meaning and hard-working teachers to mis-educate children.[3] The research revealed ways in which the predominantly <u>socializing</u> function of schools, as they operate within the framework of Western social-economic institutions, acts to the detriment of children's <u>education</u>. Strongly prescribed styles of behaving and communicating, that link success in school with the acquisition of so-called middle-class white patterns, take precedence over training for thinking. Little leeway is given for artistic, expressive thinking in a free-floating exploratory way; and only superficial attention is given to systematic, "scientific" thinking, that is, how to state problems, seek sources of reliable information, observe, compare, classify, evaluate evidence, and draw conclusions.[4]

The second project concerned the teaching of

interdisciplinary social science theory and method at a college level.[5] Among other things, the project further illustrated the failure of present educational practices to lay a foundation for the humanistic and rational approach to living that is essential if a citizenry is to deal effectively with the problems of the contemporary world. Both projects revealed how much myth and magic there is in our schooling despite constant appeals to the name of science. A limited, mechanistic and static view of natural phenomena, and a judgmental, moralistic approach to social phenomena pervades all educational levels.

Such criticisms may seem silly and irrelevant, for have we not, after all, built a scientific and technological plant that has placed a man on the moon, and have we not raised the human life expectancy to three-score years and ten? Indeed we have, but we are now being forced to recognize that this same technological plant is threatening to render the earth uninhabitable for mankind, and we find ourselves stymied at every turn in attempts to understand and control our presently murderous course. Nonetheless, still bemused by our material standard of living, and overlooking the fact that it depends at least as much on our grossly unequal consumption of the world's resources as on our "know how,"[6] countries that are now vastly expanding their school systems seek the advice that Western experts have to offer.

The new nations of Africa do, of course, state their strong intentions of borrowing selectively as they frame their designs for modern living. They wish to choose as they see fit, both from the West and the East, and always with a view to how innovations can be adapted to their particular circumstances--their present needs and their cultural traditions. Unfortunately, the commitment to social and cultural autonomy is to some extent at odds with the lack of full economic independence and with the enormous pressure African governments are under to achieve rather quickly for their people some of the material comforts commonly (and incorrectly) assumed to be enjoyed by all levels of the population in Western countries. In particular, the recognition of the need for alternatives to Western-style education conflicts, not only with the

institutionalization of Western schooling established in Africa largely by the missions, but also with the tendency to see Western style education as the avenue for achieving material success. Experiments with alternative forms are exciting, but at this writing are not yet widely influential.

It was with a view to exploring both the nature of contemporary Western influences and some of the bases for African alternatives, that I wished to visit schools in an African country, observe children both in and out of school, and discover how both parents and teachers define their goals for education. The very considerable body of literature that exists on African education suggested that direct observation of classroom life would be a worthwhile endeavour, and that any new insights that might be gained thereby could be of use not only to people trying to build new educational systems, but also to those of us who are saddled with old ones.

I visited Zambia during the spring and the fall months of 1970, spending most of my time in the capital city of Lusaka, and part of it in a village near the provincial capital of Chipata, near Zambia's Malawi border. Central to my research were observations in primary school classrooms. I conducted these myself, and I also observed children at play and at work in whatever situations presented themselves. However, I am greatly indebted to the Zambian Research Assistants who supplied all supporting data: interviews with children, teachers, parents, and other elders; descriptions and explanations of many games and other children's activities; and translations both of children's songs and stories, and of those classroom sessions that were conducted in Cinyanja, the language taught along with English in Zambia's Central and Eastern Provinces.

Ernest Phiri assisted me in all phases of the project and supervised the younger interviewers at times when I was away. It was in his parental village that I stayed when engaged in visiting rural and small city schools. Ellias Chikago, then attending secondary school, was one of the young people trained during the course of the re-

search. He interviewed children during his vacations and also supplied data on children's activities. Samson Mwanza and William Daka also conducted child interviews. Sabell Zulu and Phillip Zulu interviewed parents. Vincent Phiri, an experienced research worker who was committed to another project, gave some time on weekends, taping, transcribing, and translating discussions with elder members of the community. Towards the end of my stay in Zambia, Wills Kaira, also experienced, joined the project to help interview children and transcribe and translate the tapes.

In order to carry out my research, I was dependent upon the helpfulness and generosity of Zambians in all walks of life. I wish to express my deep gratitude for the gracious way in which hospitality was so consistently extended to me. Permanent Secretary D. Bowa of the Ministry of Education, Republic of Zambia, was kind enough to give me permission to visit schools in Lusaka and Chipata, and Chief Inspector David Barker put me in touch with M. Kusweje, Chief Education Officer for the Lusaka Region, and later with Chief Education Officer Mr. Kazhila in Chipata, Eastern Province. The warm reception of the Headmasters and the teachers in the schools I visited made my work most pleasant. I should like to thank them all by name if I were not committed to the customary confidentiality the anthropologist assures to all those who agree to be interviewed or observed.

Among the many educators from the United Kingdom and elsewhere who were living and working in Zambia and who offered information, help and advice, I am especially indebted to Jaap van Velsen, Chairman of the Department of Sociology at the University of Zambia and now Head of the Institute for African Studies; C.A. Rogers, Dean of the School of Education; G.P. McGregor, Head of the Department of Education; and D.P. Stannard, Lecturer in the School of Education, University of Zambia. At the Ministry of Education, Trevor Coombe and Malcolm Kilcross generously gave of their time to assist me. For their friendship and help I should also like to thank Patricia Spann, Ron MacDonald, Frank and Dolly Pokrass, Felix Savage King, Stanley Goldberg, Carol Angi, and Joyce Leeson Frankenberg, who were teaching, working, or conducting research in Lusaka when I

was there. I am especially glad to have met Ronald Frankenberg at the time when I was beginning to lay plans for working in Africa. He had contributed much to the new University of Zambia, and his lively interest in Zambian education was responsible for my choice to conduct my research there.

Paramount Chief Mpezeni graciously extended an invitation for me to reside in a village near Chipata during October and November of 1970. Village Headman Davison Jere made the large nyumba of his mother, Violet Zulu, who was away at the time, available to my research assistants, and another nyumba available to me. Of the many other people in the village who made my stay so pleasant and rewarding, I should particularly like to greet the elders, Nicodemo, Lufeyo, Anicolo, Festo, and Jeremiah Jere, as well as Rita Jere, Robina Jere, and Maximina Daka, and young Bess and Lackson. I hope they will convey my thanks to all the others.

For help with the analysis of my data, I thank Claudia Packer, Jean Hess, and my daughter, Claudia Leacock.

And then there are the children I went to learn about. Their enormous energy, yet discipline; their sense of responsibility, yet boisterousness; their ability to function easily in large groups, yet perform drudging tasks alone; their abounding curiousity, yet capacity for great restraint, slowly took shape in my mind as I came to know them. They grow up in critical times; I can only say may their generation build a fully free and united Africa in a fully free and united world.

SUMMARY

This is a report of a study based on observations in Zambian primary schools and interviews with children, teachers, and parents. The study was carried out during 1970, a mere six years since Zambia had gained her independence. At the time of independence in 1964 scarcely a thousand Zambians possessed full Secondary School Certificates and less than a hundred possessed University degrees. Yet during the first six years of independence the primary school enrollment grew from 348,342 to 694,670. During the same period Zambia, like other newly independent African nations, embarked on the restructuring of its entire curriculum to fit the needs of an independent nation. The assistance of expatriates was sought at the Secondary School, University, and planning levels, but, with the exception of a handful of so-called scheduled schools, the entire primary system was and is staffed by Zambian teachers. It was to learn more about the nature of this achievement that I undertook my study.

I observed classrooms in six primary schools, three in the capital city of Lusaka, one in Chipata, capital of the Eastern Province, and two in the countryside adjacent to Chipata. Running records were taken of some 44 hours of classroom sessions, distributed among 29 classrooms (cf. appendix IA). Since the written running records were augmented by tape recordings (made on an unobtrusive SONY recorder), extremely detailed classroom protocols were obtained for analysis. The use of tape also made it possible to have English translations made of sessions that were conducted in Cinyanja.

Short interviews were conducted with 454 children, of whom 276 were selected from the classrooms that had been observed (cf. appendix IB). Most of the latter were taped, transcribed, and translated, leading to much fuller and more reliable protocols than when answers were recorded directly by the interviewers. Children were asked about their out-of-school activities; their feelings toward school and school work; their perceptions of the teachers' goals for them; the teachers' rewards and punishments;

their goals for their futures; their assumptions about sources of knowledge and models to emulate; and some of their ideas about causation as phrased in terms of the weather (cf. appendix IIA).

Classroom observations and child interviews formed the core of the study. Additional data collected were: informal follow-up interviews with 26 children; two sessions in which the conversation of children was recorded as they worked on wire cars or on clay objects; interviews with 15 teachers; interviews with 165 parents, including 93 mothers and 72 fathers; 18 open-ended interviews with other adults in the city; two full discussions among 14 or 15 elders in the village; several sessions with children singing and dancing, both in the city and the country; and a session with children in the village recounting folktales. Most of these materials were taped in Cinyanja, then transcribed and translated. Exceptions were the teacher interviews that were generally conducted in English as the preference of the teacher; and some of the initial parent interviews that were not taped and were too stereotyped to be very useful.

The study followed up research on teaching practices and children's responses that I had carried out in the second and fifth grades of four New York City elementary schools. The schools had been selected to represent socially contrasting neighborhoods: middle income black, middle income white, lower income black, and lower income white; and the study revealed some of the ways in which the socializing function of the schools hindered them from carrying out their educational function. During the course of the study it became apparent that the institutionalization of a dual track system, whereby children of middle class backgrounds are channelled into the better paying professional occupations while children of the poor and the non-white are channelled into blue collar and marginal occupations, meant that the process of schooling has been bound up with imparting life styles rather than learning. The teaching of certain modes of discourse and interaction takes precedence over teaching children to think, and helping them learn how to learn.[7]

Theorists of progressive education have long

deplored the mechanistic and moralistic content of school curricula and the manipulation of children that passes for question-raising and discussion.[9] The extent to which children in school are learning to guess what the teacher wants them to say, rather than learning how to think through problems on their own, has been described in detail for middle class schools by John Holt.[9] Where children become independent thinkers, which of course some do, it is in spite of, rather than because of established teaching styles.

As for non-white children from low income homes, the study revealed some of the mechanisms whereby expectations of failure can unwittingly be projected onto children even by hard working and well intentioned teachers.[10] The data helped to counteract assumptions that the primary cause of school failures among poor children is a "culture of poverty" in which they are reared, whereby their families communicate to them little motivation to succeed, and stunt their cognitive growth through failure to provide early educational experiences. Some children are indeed deeply hurt by conditions of dire poverty and demoralization and need special attention. Most children of the poor, however, have diverse abilities and coping skills; they are eager to learn and their parents are eager for them to learn. It is school, in effect, that destroys their interest and that plays an active part in socializing them for "outsider" roles. In his criticism of education in developing nations, Ivan Illich discusses the extent to which schools are structured to keep poor children out of avenues for social and economic advancement, rather than to let them in.[11]

Basically, the "culture of poverty" concept suggests a contrast between active, able, rational, goal-oriented middle class people, and fatalistic, incapable, traditional, impulse-ridden lower class people. Such polarities merely express in slightly new form old stereotyped views of class, ethnic, and/or racial inferiority that have long rationalized unequal opportunities for children who are lower class or non-white.[12] Similar stereotypes also appear in supposedly objective studies of how well African children are prepared for "modern" education. One reads of school difficulties as caused by "the presence of

conservative, traditional, and primitive cultures often antagonistic to both the modern literary-humanistic and the science-rationalistic value systems;"[13] or by the "basic intellectual hindrances to national development" in cultures that provide "little in the way of scientific concepts" to children.[14] Since in the West such phrasings so commonly gloss over the inadequacies of educational institutions themselves, and since Western education, despite its increasingly apparent failures at home is so often viewed uncritically by many of the Western educators and researchers who are committed to introducing Western forms into Africa, I wanted to see for myself what schools were like and what the out-of-school experiences of children were like, in at least one nation of Africa.

Accordingly, I gathered materials on schools and on children in Zambia in order to inquire into three relationships:

1. The relationship between the role school plays in preparing children for adult life, and the attitudes towards schooling held by children, teachers, and parents.

2. The relationship between the school curriculum and children's out-of-school experiences.

3. The relationship between Western influences on teaching styles and curriculum content, past and present, and the understanding of today's most forward-looking educators as to how children can be prepared in school for a creative, humanistic, and rational approach to the mastery of social and technological problems.

My conclusions are necessarily based as much on the extensive work of others as on my own research. They can be summarized briefly:

1. The commitment, indeed the dedication to schooling on the part of Zambian children, teachers, and parents is impressive. Further, the goal of their schooling in the minds of the Zambian children interviewed is more clearly linked with <u>learning as such</u> by contrast with good behavior, than was the case with children interviewed in

New York City.

Nonetheless, the problem has long been recognized in Zambia and throughout independent Africa, that the persisting emphasis on a liberal arts training in higher education, and the effects of this emphasis on lower schools when they function largely as selecting agencies, is out of step with national needs and occupational realities where full industrial development is still in the future and where the vast majority of the population still live by farming. There has been considerable discussion about the need for more vocational training and adult education, and for more meaningful educational programs for schools in rural areas.[15] There has been less discussion of the reasons why it has been so hard to address these needs. The same is true in most of independent Africa, and at least part of the reason, it appears to me, is the difficulty of acknowledging and challenging what Kwame Nkrumah has called the "neocolonial" status of the new African republics that do not fully control their own occupational structuring.[16]

2. The impression gained from reviewing research reports on African children and discussions by Western educators is that, for reasons of cultural backgrounds and/or economic deprivation, children's out-of-school experiences do not fit them for modern education, especially in the sciences.[17] That there are enormous problems of malnutrition and urban dislocation to be overcome in Zambia as in Africa generally, and indeed, around the world, is undeniable, as is the fact that there are everywhere many children who need specialized care. On the other hand, the experimentation through play, and practice through work, of the children I observed in Lusaka and the countryside near Chipata was rich in cognitively meaningful experience, often of precisely the kind cited by contemporary educational theorists as affording a sound basis for learning.[18]

3. The varied influences, past and present, of the schooling introduced into Africa by missionaries and educators are most complicated to unravel. On the credit side, the early mission schools and their successors introduced literacy itself, the tool that gives access to

worldwide communication and to the accumulated body of written knowledge about natural processes and about human history. On the debit side, literacy was characteristically introduced into Africa generally, and Zambia specifically, through the rote teaching of often irrelevant facts about European history and the classics. The adverse effects of this influence upon educational practices and attitudes persist, and are compounded by the unfortunate, although to some extent perhaps unavoidable, emphasis on English as the central subject matter in the Zambian primary school curriculum.

It must be said that the achievement of the Zambian Ministry of Education in putting into the hands of teachers across the country manuals and lesson plans that present the primary school curriculum in less rote form than was characteristic of the past, and with content that reflects contemporary Zambian life, is so admirable that to offer any criticism seems the crassest kind of negativism. Nonetheless, in the interest of the program's further development, I would say from observing Zambian children and Zambian classrooms that there is a long way to go in the utilization of children's experiences. Further the manuals are at present too tightly structured, and the conception of curriculum content too narrow, to use to full advantage the considerable teaching skills of Zambian adults that derive from traditional understanding of how children learn and how they can be taught.

The centrality of English in the curriculum contributes to a feeling of inadequacy on the part of many new teachers, who are glad to have rigidly structured materials to fall back on. The recent name change of the curriculum planning body from "The English Medium Center" to the "New Zambian Primary Program," and some of the plans being projected for further curriculum changes indicate that the planners are well aware of this problem. In a number of classrooms where the "English Medium" was not yet being used, I observed some fine examples of creative teaching where a free mixture of English and Cinyanja were employed, and where nice use was made of the children's interests and their prior knowledge. I discuss such instances in some detail in the pages that follow, for my conviction is that it is the techniques developed by teachers themselves, when successful, that others will find the most useful.

CHAPTER I - INTERVIEWS WITH CHILDREN, PARENTS, AND TEACHERS

The questionnaire administered to children consisted of 36 open-ended questions pertaining to six topics. The first questions asked about out-of-school activities, and yielded rich data that were augmented by direct observation. The second set dealt with children's feelings about school, their preferred subjects and what they would like to do more of. From here the questions moved to what work the children saw themselves as doing when grown up, and to how school might prepare them. There followed questions about what children saw their teachers as liking and disliking at school, and what rewards and punishments they used. The last two sections pertained to people the children respected as wise and what sources of knowledge they recognized; and to questions about the weather, designed to tap their understanding of natural causation (cf appendix III).

That children's answers would be somewhat stereotyped was expected. It was assumed that children would respond according to what they considered appropriate to say to an adult connected in some way with their school. People always respond to an interview in terms of the context in which it is given, and we wanted to get at what children perceived to be the goals presented to them at school.

During the initial phase of the study, while I was making contacts with schools and carrying out pilot classroom observations, Ellias Chikago, William Daka, and Samson Mwanza, all teen-agers, began interviewing children in the neighborhood. The questionnaire was administered in Cinyanja, but as yet unskilled interviewers, not very comfortable with translating the results into English, plus the uneasiness of children in the interview situation, led to brief unelaborated responses. Furthermore, the answers would become quite repetitious once interviewing got well underway, and groups of children would collect to be interviewed one after another in return for pieces of candy. However, the quality of the interviews improved as my research assistants became more experienced, and efforts were

made to interview children apart from others. When Ernest Phiri joined the staff, and children were selected from some of the classrooms being observed, it was decided to tape as many interviews as possible, and transcribe them fully in Cinyanja before translating them into English. This made it possible for me to help the interviewers understand that false starts and "wrong answers" were important to record, and how to ask questions with a fair degree of neutrality. I could also work over the translations with the aid of a Cinyanja dictionary, and check for fullness of translation and subtleties of meaning. The overall trend of responses did not change, but the contents of the more exploratory questions became richer.

The aim was to interview ten boys and ten girls from each of the classrooms that were selected, and to distribute these somewhat evenly among different interviewers to help offset interviewer bias. The aim was not realized, for too many exigencies intervened, to do with school schedules, children's attendance, transportation problems, availability of tape recorders in good working order, family emergencies of interviewers, and my own pressure of work trying to keep up with classroom observations as well as the supervision of interviewing. For numbers of children interviewed, see appendix I.

Responses to the section of the interview on children's out-of-school activities are summarized in the next chapter. Children's attitudes towards schooling, subject matter, and teachers, as they vary from school to school, and from classroom to classroom, on the part of both girls and boys, will be dealt with in a later paper. For the purposes of this report, only a brief summary of what children said about schooling will be given.

First, however, the point should be made that the difficulties inherent in the meaningful evaluation of questionnaire materials were increased in the present study. It is always hard to phrase questions in a neutral, non-directive form, and the subtleties of Bantu languages make it even harder. They are structurally more complex than English, and have a highly elaborated system of prefixes that define the context of statements more closely

than is usual in English. A richness of linguistic cues helps prevent ambiguities in speech; but it is precisely ambiguity that makes questions more "non-directive."

The use of a formal interview technique for ascertaining attitudinal materials is based on two assumptions that are specific to Western culture, or at least to what might be called Western proffesional and academic subculture. The first is that it is possible to construct a neutral situation in which a person can state his "true" feelings without restraint. The second is that such "true" feelings do in fact exist; that is, that a person does indeed have unitary feelings, exclusive of each other, rather than being capable of alternative, perhaps even opposing emotional responses that are expressed according to the demands of particular situations. Both assumptions have been challenged by Western scholars at one time or another; nonetheless the questionnaire technique is still widely used.

The present study did not employ formal questionnaires with structured pre-determined choices, but instead used open-ended interviews, designed to elicit information as much as attitudes. Even so, we were well aware that responses would be somewhat selective. As stated above, we assumed that respondents would draw answers from their experience that they considered appropriate to be stated in a formal and somehow school-related context. The everpresent effect of "interviewer bias" arises from the fact that most human communication is involved with persuasion of some sort. No matter what the questions, the looks and style of the interviewer, and the context of the interview, influence the respondent. However, privatized feelings were occasionally expressed in the interviews, especially by children.

The responses by school and by sex to the questions, "What does your teacher want you to do in school?", "What else?", and "What kinds of things make the teacher angry?" are given in the appendix. On the whole, answers to what the teacher likes emphasized learning or subject matter over good behavior. When "What else?" was asked, the emphasis on learning dropped somewhat, but was made up, not by an increase in answers to do with behavior, as much as to do with taking care of the school building and grounds. The

over-all proportion of answers about learning and the curriculum contrasted with answers to a similar question given by children in New York City (both black and white, and from middle and low-income homes), as follows:

	Zambia	New York City[19]
Teacher wants good work	67%	35%
Teacher wants good behavior	30%	62%
Other	3%	3%

240 children were interviewed in New York City, 108 of them in four second grades, and 132 in four fifth grades, in four different schools. The above percentages for Zambia represent 276 children, as follows:

	Girls	Boys	Total
Lower Primary	54	73	127
Upper Primary	73	76	149
Total	127	149	276

Pilot interviews in Lusaka comprised an additional 178 urban children, 91 girls and 87 boys. Interviewed, as they were, out of school, rather than chosen from classroom lists, it would not be surprising if they included some of the more truant children and reflected somewhat more concern with discipline. Percentages on these children's responses ran:

Good work	32%
Good behavior	58%
Cleaning school of tending garden	9%
NA	1%

The far greater discipline in Zambian classrooms, by contrast with those in New York City, strikes the observer immediately. One might ask, therefore, why the discipline is less commonly seen as an end in itself by the Zambian students. That it is not merely a fortuituous result of differences in the way the question about teacher's wants was phrased or understood in the two instances is indicated by the different pattern of responses by age.

The emphasis on behavior was much greater among New York second-graders than fifth-graders. Only from 12% to 32% of the children in the four second grade classrooms responded in terms of teachers liking them to learn, by comparison with a range of from 56% to 69% among the fifth-graders. However, among the Zambian children interviewed, there was instead a slight reverse trend, with 73% of the Lower Primary children mentioning learning or subject matter and 61% of the Upper Primary.[20]

The relation between discipline and learning--that is, the point at which discipline becomes an end in itself rather than a means to the end of learning--doubtless has to do with how real the goal of learning in fact is and the nature of what is being learned. For many, schools in the United States are largely custodial institutions that hinder as much as foster learning, and teach styles of discourse rather than encouraging independent thought. Older students now overtly state a resentment that is doubtless felt by younger students. By contrast, the achievement of literacy as a national goal is accepted by everyone in newly independent Zambia, and schooling is highly desired as the means for both individual and collective advancement. The dedication to teaching and to being taught is great. That disillusionment so often can follow for the unemployed school leaver who cannot gain entry to higher levels is a profound problem that all the young African nations are facing, but it has not yet reduced the widespread commitment to schooling.

However, many children do, understandably, react to the restrictiveness and formality of the classroom structure by whishing there were more sports and games in the school program. The results of question 8, "What do you like most about school?" were as follows:

	Girls		Boys	
	No.	%	No.	%
Domestic skills, gardening	9	7	9	6
Academic work	44	35	55	37
Sports, games, art, etc.	61	48	72	48
Misc., DK, NA	13	10	13	9
Total	127	100	149	100

And answers to question 10, "What would you like to do in school that you don't do already?" were:

	Girls		Boys		Total	
	No.	%	No.	%	No.	%
Learn domestic skills	2	2	0	0	2	1
Learn or perform occupational skills	10	8	12	8	22	8
Academic work	19	15	22	15	41	15
Sports, games, arts, etc.	44	35	47	32	91	33
Take care of school grounds	4	3	11	7	15	5
Be a monitor	5	4	10	7	15	5
Bad behavior	4	3	12	8	16	6
Nothing	19	15	12	8	31	11
Misc., DK, NA	20	16	23	16	43	16
Total	127	101	149	101	276	100

One boy of 9 years puts the matter thus: "I would like to play in the classroom, for the reason that we are always given too much work and I feel too tired."

Yet one might remark upon the fact that as many as 36% respond in terms of school work in the first instance, and as many as 34% in the second. A considerable number of these answers were not in terms of subject matter, but of a generalized goal of "learning" or "passing", however, for the question could be interpreted in terms of acquiring personal competence, rather than enjoying or wanting more of certain activities. Even so, they still reflect considerable commitment to learning as a goal. This is also indicated by answers to question 5, "What would you like to do that you can not do already?" asked in the context of play and out-of-school activities:

	Girls		Boys		Total	
	No.	%	No.	%	No.	%
Domestic skills or activities	19	15	6	4	25	9
Occupational skills	21	17	40	27	61	22
Play, making things, etc.	40	31	49	33	89	32
Travel or new experience	8	6	13	9	21	8
Bad behavior	12	9	24	16	36	13
Nothing	11	9	7	5	18	7
Other, DK, NA	16	13	10	7	26	10
Total	127	100	149	101	276	101

Answers on acquiring adult skills characteristically involved gardening and general household help for both sexes, cooking, sewing, typing for the girls, two of whom also mentioned learning English, and driving and building for the boys. An answer, incorporating both traditional and modern interests, from a 12 year old village boy was:

> "I have never taught my friends, ploughed with cattle, or worked at the job of a clerk. These I have never done."

Statements about bad behavior, fighting, insulting, smoking, drinking, stealing, bewitching, or even killing, were characteristically expressed as points of fact as much as temptation:

> "I would like to pass and to go on to secondary school. I have never fought with a friend, or with any other person."

> "I have never played nsoro or stolen somebody's hen."

> "Things that I have never done are selling and fighting."

"I have never been to the moon or hit a teacher."

Occasionally, however, there were statements like:

"I want to steal, but I do not."

There were more of such answers in the city than in the country, although it is anybody's guess what relation, if any, such candour might have to the enactment of the forbidden behavior.

A nine year old girl answered the question of what she would like to do that she did not do already with charming sophistication:

> "I do not know because as I grow year by year, I turn to do things that I did not do before."

This attitude towards growing up is in keeping with the traditional training of children in eastern Africa, where occupational skills were learned through observation, experimental play, and helping in adult activities. Formal teaching was usually reserved for the social and ritual knowledge that was imparted in connection with the ceremonial initiation into adulthood that took place at puberty.

The schooling brought by European missionaries introduced the skills of literacy and formal computation that were necessary for entry into occupations in the lower echelons of the colonial administration and foreign business. It also introduced a body of largely irrelevant ritual knowledge (mostly languages no longer spoken and a mixture of myth and fact about European and classical Mediterranean history and culture) that, if successfully learned, opened up to a handful of Africans avenues to training in Western law, politics, science, and literature. While the necessity of revising this curriculum content is clear and while the process is well underway, the more complicated problem remains: what is to be done about schooling that places such emphasis on clerical skills and on preparation for higher education, in view of the need for education also geared to the needs of a meaningful life in agricultural and industrial communities?

The call for reexamination of entrenched educational practices and their limitations in the face of human and social needs is, of course, worldwide. Of the new nations in eastern Africa, it is Tanzania that has, at this writing, most fully and directly raised the problem.[21]

Several questions tapped the children's perceptions of schooling as preparation for adult occupations. Like responses to similar questions given in New York City, the children stated the relationship strongly, but could only define it vaguely. The full figures on stated occupational goals in response to the question, "What (work) do you want to do when you grow up?" are given in the appendix. Variations by sex and age were as follows:

	Lower Primary				Upper Primary				Total	
	Girls		Boys		Girls		Boys			
	No.	%	No.	%	No.	%	No.	%	No.	%
Professional, artist	0	0	5	7	0	0	6	8	11	4
Clerical, nurse, teacher, steward	44	81	15	21	61	84	15	20	135	49
Service, factory	3	6	21	29	1	1	26	34	51	18
Army, police, public service	2	4	16	22	5	7	3	4	26	9
Housework, wife	2	4	0	0	1	1	0	0	3	1
Engineer, pilot	0	0	10	14	0	0	15	20	25	9
Farming	0	0	1	1	0	0	3	4	4	2
Other	0	0	0	0	1	1	3	4	4	2
NA, DK	3	6	5	7	4	5	5	7	17	6
Total	54	101	73	101	73	99	76	101	276	100

The minimal number of "farming" answers reflects the discrepency between what one might call the school "ethos" and the social realities referred to above. The paucity of answers is not only in contradiction to the actual future possibilities for the majority of rural

children, but also contradicts both the experience and the enjoyment with caring for cattle and helping in the fields that these children report.

The variations by sex, and the high number of police-army type answers by younger boys are both similar to the New York City children's responses. In this case, the "police" answer is heavily contributed to by rural children living near the Malawi border, who are familiar with the smartly uniformed border guards.

All of the children responded that school would help them do the work they (hypothetically) wanted, but when asked how, a quarter virtually repeated what they would be doing, and another quarter answered in terms of general learning or more schooling. A few of those who answered they would like to be teachers made a specific connection. Answers were as follows:

	Girls		Boys		Total	
	No.	%	No.	%	No.	%
Learn, take a course	40	31	33	22	73	26
Do the work	29	23	44	30	73	26
Learning English	22	17	29	19	51	18
Learning to read, write	7	6	11	7	18	7
Learning arithmatic	3	2	6	4	9	3
Other	0	0	5	3	5	2
DK, NA	26	20	21	14	47	17
Total	127	99	149	99	276	99

The vagueness of the connection made between schooling and occupational preparation is also indicated by the answers to question 19. The children have been asked what their teacher wants them to do in school, and are then asked "Why does he (she) want you to do that?" As discussed above (page 17) two-thirds of the children responded that the teacher wants them to do good work (by comparison with one-third of New York City children), yet only an eighth gave learning as a reason, and only two girls and four boys mention preparation for a job. Over half treated the question as purely rhetorical and answered "yes." The responses were as follows:

	Girls		Boys		Total	
	No.	%	No.	%	No.	%
To learn	16	13	29	19	45	16
Yes	72	57	83	56	155	56
Be good, clean	11	9	11	7	22	8
Get a good job	2	1	4	3	6	2
Other	7	6	1	1	8	3
NA, DK, nothing	19	15	21	14	40	14
Total	127	101	149	100	276	99

When the chlidren were asked (question 27), "What kinds of things do you want to know about when you grow up?," and then were pressed for further answers (questions 28 and 29), they responded with a wide variety of occupational skills and matters of social skill and general knowledge. Girls also answered domestic skills. Less than a tenth of the answers were in explicit terms of academic skills. When asked (question 30) "How can you learn these things?" about a half answered in terms of schooling, a quarter in terms of asking or watching others or learning on the job, and a quarter had no answer, as follows:

	Girls		Boys		Total	
	No.	%	No.	%	No.	%
School, learning from teacher	58	46	86	58	144	52
Asking, watching others	31	24	25	17	56	20
Learn on the job	2	2	8	5	10	4
Other	1	1	0	0	1	.3
NA, DK	35	28	30	20	65	24
Total	127	101	149	100	276	100.3

A scanning of individual questionnaires reveals some children who had as realistic an image of occupational possibilities as could be expected of youngsters, as well as of the school's role in preparation for them. Others had a realistic image of occupations that would be learned from experience, and took school for granted as an avenue to literacy necessary for all manner of activities (many, for example, mentioned reading and writing letters at different points in their questionnaires.) More common than either orientation, however, were unrealistic images of future occupational possibilities and ill-defined stereotypes about schooling as somehow leading to them. The vagueness seemed to involve more than the simple limitations of childhood understanding. Instead, the somewhat

contradictory nature of the often stereotyped views expressed probably also reflects the fact that the role of formal schooling in preparation both for specific occupational callings and for adult life in general has still to be resolved. (Examples of questionnaire responses are included in the appendix.)

Before turning to a second focus of the present study, the curriculum in relation to the cognitive content of children's out-of-school experiences, brief mention should be made of parental and teacher attitudes on children's schooling and their futures.

The Parent Interviews

The parent interview was administered in Cinyanja. It was short, so as not to inconvenience the interviewee too greatly, and it concerned:

1. Attitudes toward living in their community, and extent of involvement in formal community organizations;
2. Attitudes toward their children's schooling and goals for their children's future occupations; and
3. Goals for their children's behavior, and attitudes towards children's play.

Face sheet data included age, occupation, length of residence in the neighborhood, and place from whence came. The English version of questionnaire is included in the appendix.

Parent interviews in the city were conducted by Philip Zulu, and those in the village by Sabell Zulu. The earlier interviews were rather perfunctory and stereotyped; it took time to dissuade the interviewer from the temptation to use the interview situation as itself an educational device, as well as to convince him that the particular parent of a particular child was to be interviewed rather than a neighbor with almost identical ideas. I must confess I myself am but half-hearted about formal

interview situations, and Vincent Phiri, a highly experienced field-worker, was concurrently taping and translating informal exploratory discussions with people in the city about the differences they saw between country and city life, and between traditional teaching practices and contemporary schooling. As in the case of the child interviews, the fuller and more monitored material in no wise contradicted the more abridged data, but rather amplified them.

In the village, about half of the interviews were taped and transcribed. I had originally been somewhat sceptical about the use of tape recorders as an invasion of privacy and confidentiality. I soon found, however, that people enjoyed the formality of being recorded and that it did not greatly increase the constraint already exerted by the fact that an outsider was asking formal questions. In the village, my nyumba and that of my research team soon became the scenes for evening gatherings, where songs and recitals could be recorded and played back. Accordingly, I asked about the possibility of recording free-floating discussions among the village elders on the changes in educational practice they had seen in their lifetimes.

Ernest Phiri and I twice invited ourselves to the home of the senior village elder, bringing a four-gallon tin of home-brewed beer, and some of the 200-pound bag of salt we had carted from Lusaka for modest gifts to those who allowed us to intrude upon their time and privacy. Some 15 or so people came to each of two sessions, including senior men and women of the village, the headman and his wife, and several younger people. Ernest Phiri raised questions for discussion by the group. Although problems of interpersonal relations within the village soon superseded questions about older and newer ways of training children, the material was rich with wit, humor, and occasional flashes of anger, and afforded a fuller reflection of village attitudes and problems than formal interviews could achieve. Again, however, while adding new dimensions to the interview material, these discussions did not contradict the more formal data.

165 formal interviews were conducted in all, 72 men

and 93 women. Of these, 38, 20 men and 18 women, were conducted in the village. Of the 127 urban interviews, 21 were with parents of children in the scheduled school, 17 men and 4 women, and 106 with parents of children in unscheduled schools. Of the latter, 62, 21 men and 41 women, were double-checked to be sure they were parents of a child in a study classroom. However, we shall not at this point follow through on detailed variations within the urban parent group, but limit the present report to making some general rural-urban comparisons.

The image of urbanization as a disruptive influence that upsets the balanced "traditional" life-style of the countryside has strongly permeated the thinking of anthropologists about Africa. On the one hand it has caused an exaggeration of urban uprootedness, and on the other as idealization of country life. In addition, the focus on urban-rural contrasts has served to ignore history, and to play down the disruptive influences of colonialism, as distinct from urbanization as such, in both city and countryside. Centuries of slaving by the Portuguese and Arabs, who were also interested in controlling routes to mineral resources, caused untold distress among the peoples living in what is now Zambia, as elsewhere in Africa. British colonization brought cessation of the conflict that had become endemic, but brought with it new sources of stress--loss of lands and the bitterness of apartheid. Although the persistence of kin-based cooperative institutions in the countryside is often striking, they must have changed in many ways since pre-European times. For example, the constant censure of young city women who wear short skirts, reflects a "traditional" viewpoint acquired long after missionary teachings plus the needs of Manchester mills transformed women's clothing styles. Another theme that recurred in the open-ended discussions held by Vincent Phiri, the fear of witchcraft, reflected the tensions and insecurities of interpersonal relations in the villages. By comparison with people who talked of the cooperativeness of the countryside and the fact that food and firewood were "free," others stressed illness and the fear of witches. Three men talking together spoke as follows:

1. Living in the city is good compared to

living in the country...People in the city die from natural illnesses, and people in the country die from witchcraft due to jealousy. People in the country are jealous of others, say when they have big farms and a lot of cattle. They become jealous and bewitch these people...

2. This is true. Life in the country is good, but not as good as it is in the city. People in the village become old more quickly than people do in the city. They overwork themselves and become old quickly. If my younger brother came here, you would think he is the older of the two of us.

3. I like living in the country because food is free, and one does not have to depend entirely on money as in the city. The only people who enjoy life in the city are those who are working, not people like me. I have not been able to find employment for 6 months, since I came to live in the city...There are a lot of thieves in the city. The sort of thieves you would not find in the country. The children in the city are no good; they don't have any respect for adults at all.

The response of the second speaker reflects the virtual unanimity on the part of adults that children are no longer respectful:

2. I hate the way children dress and behave these days, especially in the city. The boys put on short tight trousers to enable them to run quickly when they are chased if caught stealing. The girls put on short dresses and skirts to attract men and then rob them of their money...

3. This is true; children these days are just a nuisance--fighting, going to the cinema and stealing are all they do. They don't do what their parents tell them to. They

don't pay any respect to their parents and other adults.

Adults, of course, contrast the overt behavior of children--or at least some children--with what they remember to be their own childhood behavior. Remembering their own childhood fearfulness of adults, they may think they showed more respect than the adults of their time considered to be the case. However, although the extent of the change in one or two generations is probably exaggerated, there is the real basis for a difference in child-adult relations when the elders of a community are no longer, as a body, the ones who provide the meaningful role models for the young, and no longer control access to avenues for advancement as children grow to maturity. And there has been greater change in this respect in the city than in the country. The answer 16 of the 38 rural parents gave to the question "What do you think your childern will do when they grow up?" was that they would take care of their parents. Only one of the total urban parent group gave this as an answer.

The attitude towards children's play expressed by parents in the city reflected some distrust of peer groups as no longer under clear parental control. 18, or 17% of the urban group said the children might learn bad habits, such as lying or stealing, from playing; no one in the country gave such an answer. About a third in the city said the children learned nothing, to a tenth in the country.

The changing role of parents in relation to passing on basic skills is reflected in answers to the question about the most important things parents should teach their children. Rural parents give more practical answers: farm work (11 of 38), housework (9 answers, with only 2 such in the urban group), running errands (5). Both groups answered in terms of good behavior, being helpful, working hard, not fighting, etc., but 57% of the urban group specifically included honoring their parents, while only 16% of the rural group did so. One can only assume the latter took such honoring more for granted. As a commentary on this,

there were 18 (14%) answers in the urban group that they should teach their children to listen to advice to only one such answer in the rural group.

The Teacher Interviews

Fifteen of the 27 teachers who were observed were interviewed, seven teachers in the urban unscheduled schools, four in the small city school, and four in the rural schools. When I first visited a school, the Head would inform me about its size, number of classrooms, and the like, and would then take me on a visit to the classrooms and introduce me to the teachers. In the process I would of course be identified with the Inspectorate of the Ministry of Education, the bureau that sends people to visit the schools and evaluate the various new curricula that are being introduced. There was, consequently, considerable formality surrounding both classroom observations and teacher interviews. There was little familiarity with the practice accepted in field research, that the individual interviewed or observed remains anonymous so that the primary data are in a sense confidential. Unfortunately, I did not have the time to pursue discussions with teachers to the pount where they could candidly talk about how they saw their successes and their difficulties. Nor did giving the responsibility for interviewing to a Cinyanja-speaking assistant yield any fuller materials, since he too was identified with the formality of a study. Had I the time, I would have pursued the kind of discussion I had with two teachers who asked me about schooling in the United States, and for some of my opinions in return for theirs, while we sat informally on the grass after scool.

The teacher interview, an open-ended series of questions, is given in the appendix. It was given following the classroom observations. The interview focuses on the teachers' expectations for the children in their classes and on their methods of teaching and classroom management.

Although there is considerable variation in the interviews, in keeping with differences to be expected in individual style and attitude, they contrast as a body with the interviews from my New York study in that they are permeated with a much more positive outlook toward both the children and their parents. The institutionalization of failure for poor children that asserts itself in so many ways in urban school studies in the West is noticable in its absence. There were some hints of such attitudes, one teacher saying "The difficult group, in fact, all come from the shanty compounds," and another informally disparaging his class to me as a "slow group," but such remarks were offset by constant reference to the importance of tapping each child's potential. For example:

> "Since this is a lower primary school, I can't say I have difficult pupils... they are still young. You see they can shift in any direction."

> "...children who don't really understand. I think that if I work with them earnestly, explaining to them, they will understand..."

The teachers discussed the difficulty of giving sufficient attention to slow children, and the problem of children falling further behind. The point is they saw objectively the problems of teaching difficult material under difficult conditions; they did not, as was so common in New York City, feel a sense of failure and handle it by blaming either the children for lack of ability or parents for lack of interest. They reported most parents to be interested, and responsive to being approached when a child was truant, or misbehaved, or fell behind in work. Not that this was their experience with everyone, of course:

> "There are, of course, some parents who help children and there are some who don't help, so you have to so your best for that child. There are some children who are slow but are very keen to learn. They constantly need someone to look after them."

"Parents usually show interest in school.... (But) there are parents who only know their child goes to school, but do not bother looking in the child's books. And sometimes do not even know if the child comes to school...."

"(Some parents), since they have never been to school themselves, think that once the child is given to the teacher, that's his duty, he knows what he is doing. So if by chance you come across such a parent, you talk to him, greet him, and tell him, well, I've got your child, I want to teach your child..."

Some of the teachers felt it was meaningless to ask about the children's futures when they were still so young. Others had specific ideas:

"It would really depend... Some of those who are very creative might become doctors, some will become teachers. Some will work in factories, and some will be working in various kinds of jobs."

One teacher in the small city school raised the question of education in a predominantly rural setting:

"What they are learning is all right, but I think it would be a little better if they learned some agricultural work while they are at school...After grade seven, they won't know much about agriculture, so it will be difficult for them to do a job connected with agriculture..."

CHAPTER II - CHILDREN'S OUT OF SCHOOL ACTIVITIES

In pre-industrial society, play merged with work, formal with informal learning, and instruction with experimentation as children grew to adulthood. With industrialization, however, important adult activities, including most of productive work itself, became separated from the flow of family and community life and closed to children's observation (except under the harsh and restricted conditions of child labor in factories.) "Play" became sharply differentiated from "work," and children's preparation for work became more and more formal, with an ever-increasing period of schooling preceeding any participation in adult occupations. A long period of highly formal education became taken for granted as a necessary concomitant of the enormous accumulation and specialization of knowledge and skills in technological complex society. It is therefore ironic that the very complexity and rapidity of change in highly industrialized societies is threatening to render many of Western educational practices obsolete, even for technical training.

On-the-job training, long recognized, at least informally, as essential for most occupations, may be coming back into its own as new educational perspectives point to the importance of linking formal course work with apprentice-type programs, and linking on-the-job experience with continuing adult education. However, often irrelevant requirements of formal courses still persist as the basis for occupational advancement, and, paradoxically, have been adopted as the educational model for the newly industrializing nations precisely at the time they are coming in for critical review in the West.

Unfortunately, along with the acceptance of Western models for education, there has been the increasing tendency to equate school performance with ability, and to adopt standardized "intelligence tests" to select students for admission to higher education. What such tests measure, however, is largely the previous training and experience of a given child. Since tests have traditionally been constructed by middle-class Western-trained social scientists along lines that are familiar to them,

their use in the West has acted to reinforce institutionalized patterns of educational and occupational discrimination by race and class. Although the prevalence of testing has been cogently and repeatedly criticized, the use of tests to determine chances for advancement in school or in a job has not decreased. Instead, the pervasiveness of testing has itself influenced the designing of curricula. Since the way in which most intelligence tests are constructed presupposes that intelligence is based on thinking along the formal lines of a logical proof, and since the relation between test-taking ability and various kinds of creative thought remains obscure, the effect of this influence has been pernicious.[22]

In the study of African children, the problem of testing has been compounded by the fact that Western researchers have all too commonly observed the children's performance in formally structured situations that involve the manipulation of unfamiliar materials in unfamiliar ways. Understandably, African children have been found lacking by comparison with Western children. Fortunately, some researchers have become more sophisticated about differences in culturally patterned skills, and have found that varying the tests to fit children's previous experience, and finding ways to present them in more familiar terms, can reduce group differences between African and Western children to the point where they disappear altogether.[23]

Yet the fundamental problem of what is being tested for remains, and it is complicated by questions about the relation between cultural traditions and individual thought processes. African writers, philosophers, and statesmen have for some time commented on the greater sense of community they see as characterizing Africa by comparison with the competitive individualism of Europe, and the greater sense of identity with the natural environment;[24] and anthropologists have long been interested in recording non-Western ideologies and symbol systems.[25] However, inappropriate deductions have often been made about the effect traditional world-views and mythologies may have on the carrying out of practical, "rational" technological activities. The historical interweaving of speculative thought and group experiences

embodied in one or another philosophical system have been treated as if they arose as a direct reflection of individual thought process, or as if they directly affect individual thought in a one-to-one relation. In other words, the assumption has been made that the body of scientific knowledge accumulated in the West is the direct product of "rational," and "abstract" individual thought processes, precisely those processes that intelligence tests presume to tap. The existence of various Western mythologies are ignored in such reasoning, as are the variety of non-Western technologies. And non-Western children are found to have less "ability" for "scientific" reasoning than Western children.[26]

The Western mythology that surrounds such thinking is nicely illustrated by a newspaper article on Albert Einstein. Einstein wrote about "thinking" as the process through which "sense-impressions" move to "memory-pictures" and become ordered in a "concept" that may or may not be connected with a word or "a sensorily cognizable and reproducible sign." When it becomes so connected, it is communicable. When thinking about light waves, Einstein imagined himself in a "thought experiment" to be "riding through space, so to speak, astride a light wave and looking back at the wave next to him." However, in contradiction to the pictorial imagery Einstein speaks of himself as employing, the newspaper article reporting the second example was entitled, "The Einstein Papers: The Childhood of a Genius Displayed a Gift for the Abstract." If it was the great scientist Einstein, it must have been "abstract".[27]

The point is that tests which measure what children can do with "logical" and "abstract" problems, to see <u>if</u> they are able to learn "science" are constructed according to a series of confusions. The products of experimentation and considered judgment are everywhere in Africa, the technologies of agriculture, animal domestication, leather work, wood work, pottery and brick making, metallurgy, upon which African societies were built. And today, the activities children carry on by themselves reveal the foundation upon which training in conscious conceptualization can be built.

Through play, children relate to and experiment with their own abilities and with their social and physical environment. In a statement on teaching science written for the American Association for the Advancement of Science, the psychologist, William Kessen, makes the point that "scientific problems arise in the play of children just as they arise in the guided exploration of scientists."[28] Through play, children learn to define problems, to seek reliable sources of information, to observe, to classify, to use instruments, and to measure. Through such activities, the basis is being laid for learning the more advanced techniques of scientific experimentation, and how to evaluate evidence and draw conclusions.

Imitative play traditionally was basic in the training of children in Africa as in pre-industrial societies around the world. It has been described in some detail for eastern Africa by Jomo Kenyatta for the Gikuyu, by Lucy Mair for the Baganda, by May Edel for the Bachiga, and by Margaret Read for the Ngoni.[29] Kenyatta wrote that in their play, Gikuyu children

> do most things in imitation of their elders and illustrate in a striking way the theory that play is anticipatory of adult life. Their games are, in fact, nothing more or less than a rehearsal prior to the performance of the activities which are the serious business of all members of the Gikuyu tribe. (p. 98)

"Playing house" is a rehearsal for adult roles carried on by children around the world. In African societies it entailed technical as well as social practice, for boys and girls built and thatched small houses and made and used various tools and utensils according to local practices. The boys made such things as axes, knobkerries, spears, shields, slings, and boys and arrows, and might also build mineature cattle kraals. The girls made pottery for cooking real or imaginary food, as well as clay or reed dolls, and perhaps mats or baskets of plaited grass.

Play was smoothly and informally transformed into work as children accompanied their mothers and fathers to

the fields or went with them for wood or water. Edel wrote:

> A little girl accompanying her mother to the fields practises swinging a hoe and learns to pull weeds or pick greens while playing about. She learns the work rhythms, the cycle of the seasons, which crops must be planted in "hard" fields, and how to tell whether a field is "soft" and useful for certain crops, or ready to lie fallow. A boy tagging after his father watches him milk the cows or thatch the house, whittle a hoe handle or roast a bit of meat on a stick. Playing with a small gourd, a child learns to balance it on his head, and is applauded when he goes to the watering-place with the other children and brings it back with a little water in it. As he learns, he carries an increasing load, and gradually the play activity turns into a general contribution to the household water supply. (p. 177)

Mair told of Baganda girls of three or four learning to use small hoes, and at a little older learning to peel plantains (p. 64). Read wrote of Ngoni girls given small granches to carry home on their heads, and tiny pots for water, "perched on a mineature grass carrying-ring." (p. 85) Kenyatta wrote that as Gikuyu boys helped in the fields, their fathers taught them the names and uses of various plants (p. 99). From his own childhood experience, he recounted how the Gikuyu boy roamed the country-side and learned "to distinguish a great variety of birds, animals, insects, trees, grasses, fruits and flowers. His interests bring him in contact with these things, since they constitute the furnishings of his play activities." (p. 102)

Riddles and puzzles were asked of young children in the evenings either by their mothers or by older children. Kenyatta referred to these as "mental exercises" (p. 100) and Read gave several examples, such as, "The live thing bore a dead thing and the dead thing bore a

live thing," referring to the chicken and the egg (p. 97). In addition to learning about manners and mores through direct instruction, youngsters learned about their people's history and society through lullabies and stories. As soon as they were old enough to remain quiet, they could listen to the adjudications that transpired in the outdoor courts, and to the lengthy discussions of community affairs by the elders. Through these means, too, children were introduced to the highly valued rhetorical arts. Read recounted:

> A perennial amusement among Ngoni boys of five to seven was playing at law courts. They sat around in traditional style with a "chief" and his elders facing the court, the plaintiffs and defendants presenting their case, and the counsellors conducting proceedings and cross-examining witnesses. In their high squeaky voices the little boys imitated their fathers whom they had seen in the courts, and they gave judgements, imposing heavy penalties, and keeping order in the court with ferocious severity. (p. 84)

As children assumed adult roles in the course of play, they were praised and applauded, according to Edel, but they set their own pace and determined their own special interests. When they wanted to learn something, they set about learning by observation, for there was "little supervised training and less lecturing." (p. 178) There was considerable individual variation, therefore, as to when children learned things and what they chose to learn. Specialists--smiths, wood-carvers, bee-keepers, tanners, shield-makers, barkcloth-makers, etc., as the case might be--taught their sons their craft, but even here there was wide latitude for individual interest. Edel stated that a Chiga boy interested in being a smith would start working the bellows and learning about woods good for charcoal when he was about ten, and if his own father was not a smith, he would move in with another man and learn from him (p. 180). Read wrote about the specialty of making musical instruments among the Ngoni. "A boy might all of a sudden decide to make such an instrument and learn how to play it by assiduous practice." (p. 138)

The time came when the freedom and casualness of play and exploration were replaced by expectations of mature performance. The older herd boys were held responsible for keeping the cattle healthy and well-fed, and "the daily scrutiny of the herds by the owners was made the occasion for blame or commendation," wrote Read (p. 130). Kenyatta described how young herd boys were tested to see that they knew each individual of as many as a hundred cattle, sheep, and goats. The boys had to sort out herds that had been mixed, or had to figure out which of their own herd had been hidden. The cereminial initiation into adult status that took place around the time of puberty was marked by formal teaching and testing about religious and social matters, and about adult codes for behavior. Demands for competence, however, were based on many years of free and experimental participation and experience. Writing of his own childhood play, Joseph Lijembe, an education graduate of Makerere University College, wrote:

> Looking back, I know now that through these play activities [I] developed my imagination, made discoveries about the world of nature, and gained important social skills, usually finding myself organizing and generally taking the leadership of my group of playmates.[30]

By contrast, mission schooling introduced a type of education which minimized direct observation and experimentation. Kenyatta wrote that much of the teaching in European schools in Africa is "by general class instruction" whereas "the tribal method is to teach the names of particular plants, the use of different trees, or the management of a particular herd of sheep and goats or cattle," and, after this, to leave the child "free to develop his own initiative by experiments and through trial and error to acquire proficiency (pp. 116-117)." Learning in the new schools was by rote; the question-raising and problem-solving that were part of informal participation and play were absent. So, too, was the direct experience of the apprentice.

Paradoxically, therefore, while manipulation, experimentation, problem-solving, and question-raising

based on children's direct experiences are considered of fundamental importance in recent Western educational thought, formal education in Africa still relies heavily on outmoded authoritarian European patterns. As the first step out of this situation, there has been an attempt to overhaul the curriculum thoroughly by introducing African history and institutions, names, foods, climate, and countryside into readers and texts. In Zambia the next step in currriculum planning for primary schools has been to promote more student-teacher interchange, and to introduce some problem-solving devices such as dot-cards in mathematics. A further step very much needed is to work out how children's education can be built more directly on their day-to-day experiences as they organize themselves for a variety of games and activities; count scores; handle volume, area, and linear measurement in myriad ways; engage in adult role playing; work with language, story, and song; apply practical knowledge and technical skill in the making and use of varied toys and instruments; go to the local store for their families; and help about the house and kitchen garden, or in the fields.

It was easy to observe children's activities from the house where I lived in Lusaka. Its yard was a local playground, and an empty field lay between it and one of the neighborhood primary schools. Their activities were also reported on by the many children interviewed, and were described in further detail by my research assistants. Most commonly observed was the popular boy's sport, soccer (or "football"). Boys may form themselves into teams, raise funds for a ball and team shirts by doing odd jobs or soliciting money from relatives, elect a captain and administrative committee, and set up rules. In one case members were to be fined 20 ngwee (28 cents) for being absent from practice without excuse. Endless variations on other ball games were also observed, as well as local variants of world-wide children's amusements: hide-and-seek, tag, hopscotch, tug-of-war, jump rope.

Boys and girls characteristically each have their own games and play separately. One common girl's game involves throwing a ball back and forth between two lines of players, trying to hit a girl in the center before she can fill a bottle with earth.

From the age of six on, children play the "husband and wife game" for which they build and thatch playhouses and make clay utensils. A girl of nine told of staying away all day and cooking real beans and nsima, the staple food of stiffly boiled cornmeal. Usually the girls play separately, but a boy spoke of making sun-dried bricks, using a wooden mold, for building a playhouse. Boys also help their fathers make bricks, both in the city and the countryside. Both sexes make clay cattle and other objects: the girls, often dolls and utensils; the boys, cars.

They also rummage in garbage bins for tin cans. A boy described how he and his friends stacked them up as high as they could before they fell. Little girls play filling them and pouring water and dirt back and forth. Watching their concentration, one is reminded of statements such as the following from a manual of the Nuffield Mathematics Project, that is so influential in the current changes in the British "infant schools":

> From the point of view of mathematical concepts water play is important in establishing a basis of experience which will lead to the eventual and true understanding of volume and capacity. The children will be filling three-dimensional space and discovering relationships between containers.[31]

Old hunting games are not completely gone even in the city. Children set fire to dry grass in the fields to to catch rats; make slings for shooting birds; and trap them with ulibo, a plant gum, which they collect, heat with oil, and knead. The city of Lusaka is spread out, and there is some open space for gardening. Children may help clear and work the ground. Some boys help their fathers with carpentry or brick making. Girls often report enjoying helping their mothers cook, sometimes giving recipes. And again, the Nuffield teaching manual points out:

> Experience of volume, capacity, weighing, estimation, measurement of time; the appreciation of the approximate nature of measurement; and the need for standard units - all these may be

derived from cooking activities.[32]

Boys scrounge for the materials to make musical instruments--oil tins, pieces of rubber or plastic, light wires. They make banjos and guitars, drums, and bass fiddles consisting of a single heavy string attached to a drum. They often write their own songs and organize bands, hoping to collect a little money at informal gatherings. One day a local band led a "parade" into the yard and around to the back of the house. More than fifty smaller children followed, showing the casually self-imposed orderliness that characterizes such situations.

Girls love chitelele, the traditional women's dance in which women step out of a singing, clapping circle to take turns dancing individually in the center. Girls know a great many chitelele songs; in fact, both sexes know an endless number of songs, both old and new, and love mashasha, or dancing as couples to jazz. They also know folktales, which the older tell the younger; while living in a village for a period, I collected some of these from children nine to fifteen years old.

Many languages are spoken in Lusaka (as in African cities generally), and the children are adept at hearing, interpreting, and compensating for dialectic differences in closely related tongues. Indeed, their linguistic facility and interest is so great that it suggests an area for curriculum development to enrich the cognitive content of English teaching. This verbal sophistication is illustrated by a game called kapenta (a fish, dried for shipment), as described to me by a twelve-year-old girl:

> In this game, people sell kapenta. One person in the game is Nsenga and the other Bemba (two of the many national groups in Zambia). The Bemba sells the kapenta, saying, "I am selling kapenta." The Nsenga asks the Bemba what he is selling in Nsenga. The Bemba misunderstands, and a fight starts due to the misunderstanding of the languages. Someone who knows both languages comes to intervene in a fight between the two and explains what each one has said to the other.

Boys are ingenious at finding and making do with available materials. Seesaws are improvised; poles found for stilts and pole vaulting. To make a wagon, one boy said he gets planks from the brewery, finds floor-polish tins, cuts poles from trees, and makes wooden wheels. Another boy of ten recounted difficulties making wagons:

> It is difficult to obtain the wheels, because sometimes it is risky. I went to a construction site to look for wheelbarrows to take the wheels out. After I collected the wheels, I got a wide plank and two iron bars, to which I fixed the four wheels. I tied the axles to the plank with wires, and made a steering wheel. Friends pushed me, and one day we went to Lilanda where the traffic policeman caught us and took the car away from us.

The most characteristic of African toys is the wire car. These are models of cars and trucks that most boys start making at eight or nine. They are from one to two feet long, and made of heavy wires bent into shape and bound together with finer ones. Discarded wire is found without too much difficulty or if pilfered, becomes anonymous when reshaped. Sometimes the models are covered with pieces of packing-case cardboard. An eleven year old said.

> I collect the wires from the rubbish pit at Mtyonyo Township whenever the municipal vehicles go to dump some rubbish. After I have collected the wires, I take some of the biggest and make the chassis of a bus. Then I build up the body. When the body is done, I take some cardboard and attach it to the bus to make it look more like the usual buses we board.

An unusual style is made by another eleven year old, who attaches a clothed wire person to a Honda, actually a tricycle. "When I start driving," he said, "it begins dancing," describing one which wobbled from side to side when pushed. He sells them, he says, at 24 ngwee each (34 cents). A nine year old said:

> The cars I like very much to design are Fiats and Land Rovers. I ask my friends who live near the municipal rubbish pits to collect wires for me, which I buy at 20 ngwee. When I make the cars I drive them in the road, but when I am fed up with one, I sell it for 40n to a friend who doesn't know how to make them.

(The price quoted was perhaps high; it had been bruited about that I was in the market for wire cars!)

Most models are uncovered trucks, which can be loaded with miniature logs. A twelve year old said that when he makes cars he gets together with his friends. "We make small roads and put up road signs and signals, and one of us becomes the traffic inspector. Anyone who commits a traffic offense is charged and liable to a fine of four buttons."

Boys are most commonly seen running up and down with their cars, pushing them along from a standing position. A long heavy wire, bent into a circle at the driving end, is attached at the other end to the front axle of the car in such a fashion that the boy steers the car by turning the wheel in his hands. One of several steering mechanisms may be employed. After a boy decides which type of car or truck to build, he straightens and cuts lengths of heavy and light wire. The chassis is built first, and from this the proportions of the sides assessed. The model may be purely exterior or finishing touches--a front seat, driver, and steering wheel--may be added. No tools are used; none but hammerstones are available. Stove- or shoe-polish tins are usually used for wheels, enclosing wire circles stemming from the axles.

There are many ways in which the management of proportions, spatial relationships, symmetry, and measurement involved in the building of these cars could afford a basis for exploratory classroom discussion. Not that individual cars lend themselves to effective use; they are too complex. However, wire models of just chassis and wheels, familiar and often of interest to girls as well as boys, could be used to raise such questions as:

How much wire would be needed for a chassis of the same proportions, but twice as long? How much more material would be needed to cover it? Children could make wire cubes and find out how much wire is needed for a cube twice as big; how much cardboard to cover it; how much gravel to fill it. Or the children could explore the relationship between wheel size and the number of rotations a wheel makes in a meter. Or, a problem suggested by the Honda-maker, who uses a split back axle on his trycicle: What happens to each back wheel when a car with a solid back axle is turned? With a split back axle? Why?

Other games played by Lusaka children are variations on marbles and jacks, played with stones. Board games of various sorts are known; checkers is a favorite. Most interesting, however, is a characteristically African game, nsoro. A West African version is played on a thick board with carved-out hollows into which counters are placed. In Zambia, long rows of holes are simply scooped out on the ground, and pebbles are collected for playing. In certain neighborhoods, groups of men can almost always be found standing over a game of nsoro.

A simplified children's version of nsoro is played using four parallel rows of 12 holes each. There are two players; each has two rows to move in. The game starts with two stones, or counters, placed in each hole of the two outer rows. Counters are moved to the right in the outer rows; to the left along the inner rows. When a player lands in an inner hole adjacent to an opponent's inner hole containing counters, both these and any in the corresponding hole on the outside row are "eaten," or knocked out of the game. The winner is the first to eat all his opponent's counters. A move consists of picking up all the stones in a hole of one's choosing, reserving one of these, and placing the others one by one in successive holes. If the next hole is empty after they are played, the reserved stone is placed in it and the move is finished. If not, all stones in that hole must be picked up and played as part of the same move, which cannot end until an empty hole is reached for the reserved counter. As a player moves into the inner strip,

close to his opponent's counters, he must be careful not to leave open to being eaten without at least being in a position to eat more of his opponent's counters in return.

In playing nsoro, then, children learn to weigh alternatives that involve a series of additions and subtractions of small numbers. The entire strategy of a play is complicated, but the elements of the game--an enjoyable activity in which younger children watch older ones, and older children watch the more complex adult version--could be utilized for presenting concepts of number, and addition and subtraction. To quote again from the Nuffield teaching manuals,

> Many teachers have realized through their own experience that more learning and indeed more enjoyable learning can be gained by working through the interests of children and many of these interests do, in fact, arise during play.[33]

CHAPTER III - THE CLASSROOM

Observations were conducted in 29 classrooms in six different schools (as listed in appendix IA). 27 teachers were observed; one person taught both the first and third grades in the rural lower primary school, and another person taught second and fourth. Two classes were held in the morning and two in the afternoon in the two-room school house. 18 of the teachers studied were women and 9 were men. On the whole the men were more experienced than the women, since women have moved into the teaching profession relatively recently.

A written running account of classroom events when combined and written up with a taped record yielded almost complete data on the teachers' verbal exchanges with the students, plus supporting descriptive material on children's participation and reaction. The precise contents of individual children's contributions were sometimes lost, however, when the children spoke shyly or mumbled. The taping of the classrooms made it possible for sections in Cinyanja to be translated into English.

The classrooms shared some of the characteristics that have been noted for school life generally in the newly industrializing nations. The limited amount of teaching materials and equipment strikes the observer. Although Zambia has made tremendous strides in making available new primers and workbooks, written for Zambian children, as well as teaching manuals, charts, and other aids, the rapid expansion of primary education has made it extremely difficult to produce these in adequate supply. The prevalence of rote teaching, (although considerably modified by comparison with older practice); the great emphasis on English and mathematics to the detriment of science, social studies, and creative activities; and the strict discipline in the classroom even with the first and second grades--all contrast with the contemporary emphasis in the West on the active participation of children in the educational process. However, while good experimental schools in the West can be found as models for what education could be, the "freedom" of the ordinary public

school is no more than some mix of children's bored and frustrated rebelliousness and the teachers' lack of rapport with them, while lessons supposedly based on "discussion" or "involvement" or "experimentation" are superficial and manipulative. Conversely, several features of the Zambian classrooms I observed contrast with New York City classrooms in ways that seem to me of great importance in the learning process. Among these are:

1. The ability of the children to share, even pens and rulers, and to bend three heads over one reading book, when necessary, without shoving and jostling for place.

2. The protection of the child from the anxiety of individual performance through teaching methods largely based on group recital. However, the children do have the chance to perform individually in many lessons when they are called on to raise their hands. Children do, it is true, subject each other at times to harsh criticism by somewhat derisive laughter. Some teachers accept this; others, however, chided the children for laughing at their classmates. In any case, the structuring of the lessons strongly emphasized groups, as illustrated by the analysis of teacher remarks (cf. appendix IIA).

3. A quality of supportiveness on the part of the teacher that might seem in contradiction to the general strictness and "authoritarian" atmosphere of the classroom. There has been much confusion surrounding social-psychological research on education in the United States, especially that which in the past centered on a so-called authoritarian versus democratic classroom style. Strictness was virtually equated with rejection and lack of respect for children, and permissiveness with a "democratic" acceptance. However, when strictness means the definition of a clear-cut structure for work and of high demands for performance, it is not the same thing as harshness and punitiveness. Furthermore so-called permissiveness, when it becomes a matter of cajolery and manipulativeness, can be very non-supportive to children. (As a personal example, this was made clear to me when my 7-year-old son went from a relatively strict but hard-working teacher to an outwardly warm and permissive woman, popular in the school, but actually, perhaps, more concerned with winning over children than teaching them. After a few days in the

new classroom he observed with a real note of disappointment, "Mrs. ____ doesn't care." The following week he reported, "Now I don't like school either, like the others.")

In Africa generally, in the past, the formal schools were often overly harsh. While children today are hit in school as one form of punishment, parents are beginning to object to them being really beaten. Actually, while the threat of being hit is there, it does not seem to be applied that often, and, from what the children reported in their interviews, it is applied for misbehavior, not for failure to learn (as was the case in the mission schools of the past, according to biographical and novelistic accounts.) In any case, the teachers I observed in Zambian classrooms were characteristically strict without being dirisive or undermining, though there were, of course, exceptions. The breakdown of teacher interactions with students given in appendices IIA, IIB, and IIC indicate that the teachers as a group were more neutral in their directives on behavior, and less negative in their evaluations of student performance, than was the case in the New York City schools I observed. These comparisons are to some extent also true of differences between the unscheduled schools with their Zambian teachers, and the scheduled school with many teachers from the United Kingdom and others from India, South Africa, and elsewhere.

First, the proportion of teacher interchanges with children pertaining to work, by comparison with those pertaining to behavior is higher in the Zambian sample. The average is 84.5% of interchanges addressed to curriculum in the unscheduled schools to 56% in the scheduled school, and the range for six New York City schools was from 44% to 65%.[34] Some of the difference arises from the existence of group work sessions in the New York schools where the children were interacting with each other, and some to the importance of group drilling in the Zambian schools, but most, I would say, derives from the greater teacher-student rapport about the business of learning in the latter, and what might be called the group-self-discipline of the Zambian children.

Second, and more important for the present discussion,

is the distribution of positive, negative, and neutral teacher directives and responses. Remarks on behavior, while more evenly distributed between neutral and negative in the scheduled school, are preponderantly neutral in the unscheduled schools, that is, straightforward directives about what to do or not do. In relation to curriculum, the preponderant teacher response to children's answers in all schools is neutral acceptance; this is generally true. Negative responses, however, run from null to 8% in the unscheduled school classrooms, from null to 22% in the scheduled schools, and from null to 16% in the New York City schools.[35] Furthermore, "urging" is a category that had to be added to the New York ones when analysing the Zambian materials; it characterized a number of teachers.

The scheduled school raises some interesting questions. Interestingly, positive remarks on behavior do not appear in the unscheduled schools, but do in the scheduled school, as children are commended individually and held up to others as good examples. And a look at appendix IIB shows that classes where teachers commonly evaluate children's work negatively also show a high proportion of positive evaluations. This is not true in New York City schools, but the classes were in that case more homogeneous as to children's backgrounds. In the atmosphere of strongly evaluative definition of children's work of the scheduled school, the question presents itself who is being sorted out for success and failure in the highly competitive milleu into which both the expatriate and the Zambian children in such a school will be moving.

4. A last feature of many Zambian classrooms that presented itself strongly to me as an observer was a certain sense of teaching as a performance, a sense of style about it. Style is, of course, a highly individual matter, and one never knows when one may run into a teacher who possesses a quality of real artistry. On the whole in the West, however, teacher training schools threaten to replace this sense of personal style with the characteristically "school-teacherish" voice, mannered, controlled, superficial. The teacher role in Zambia seems to have taken on something of the traditional style of story-telling, or legal disputation, or public discussion,

where great attention was paid to skill in oral presentation. Some teachers were clearly enjoying having their teaching observed, and showed skill in presentation that was not derived from formal education, reacting sensitively to the mood of the children, winning them back from inattention with a change in pace, a humorous illustration. Even some of those who were clearly nervous and constrained at being observed by an outsider began to enjoy displaying their skills as they relaxed.

The present curriculum, with its great emphasis on English, however, constrains this skill. The assumption is that children must first become literate in English in order to be prepared to learn more effectively later on, but the highly formal mode of teaching fails to integrate language learning with content of real meaning and use to them. The detailed manuals and lesson plans, while on the one hand an enormous accomplishment and advance, can mislead an insecure teacher (especially, I should add, when being observed) who feels they must be followed without deviation. Consider the following lesson:

> Revision: Sounds (5 minutes)
> (i) Write on the board: s b a; and ask children for words containing these sounds. Note that 'a' as in 'can'
> 'i' as in 'six' are the sounds required.
> (ii) Write the words on the board and get the children to underline sounds for you, e.g.
>
> | s | b | a | i |
> |---|---|---|---|
> | six | boy | cat | six |
> | bus | ball | man | his |

Following the plan, the teacher was put in the dilemna of "correcting" a child incorrectly:

> Teacher: Boy... Ball... Boy... Ball... What sound can you hear? (She goes over to the desk, looks, presumably at the lesson on it, and goes back to the board.) Can you hear the sound of b? (She so drops the letter "b" that it can scarcely be

heard. I assume she is unsure about something herself.) Now, cat... man... cat... man... What sound can you hear? (three hands up, at table 2) What sound can you hear? Cat... man... Musonda.

Musonda: (scraping his chair as he stands up) a.

Teacher: A. This is the sound you can hear (she is pointing with a yard stick to the letter above). Now, six... his... six... his... six... his... What sound can you hear? What sound can you hear? (six hands up, 5 at table 2 and 1 at table 3) What sound can you hear? Yes?

Girl: (with assurance) s.

Teacher: No. Six... his... six... his... Yes? What sound can you hear? (I do not hear the child's answer) No. Mwanza.

Mwanza: (fairly big boy, back of table 2, loudly) i.

Teacher: I. Umhumm. You hear the sound of i.

Or, in another case, when children were completing sentences:

Student: John caught a lot of fish.

Teacher: No. William, you correct him, go ahead.

Student: John caught a lot of fishes when he went fishing.

Teacher: You say that, Tembo.

Student: John caught a lot of fish.

Teacher: No, John caught a lot of fishes when he went fishing.

Consider, by comparison, a sixth grade teacher who interjects during the reading of a story:

Teacher: Zikomo. (Thanks) And this is a sign of respect. (He writes "ulemu" "respect" on the board) Respect is a noun (he is talking in Cinyanja, but uses the English word "noun.")

Class: Respect is a noun.

Teacher: Although we cannot touch or see respect,

> we must always see to it that we respect people, so that we grow to be respectful. What are other words which are nouns, but cannot be seen or heard although we feel them? Again, we know there is "respect." What other words which we can feel but cannot see, like "respect?" Yes?

The teacher draws answers from the class, discusses them, has the children's interest. Death, chieftainship, marriage, legal offence are all offered, and others that raise problems, God, soul, sickness. He jokes, discusses; the children listen, offer words, are involved.

Another episode illustrated the discrepency between a formal prepared lesson and what the children and teacher had to offer as the basis for a more imaginative curriculum. It was a fifth grade classroom and the radio was turned on for the science lesson, a formal presentation of the parts of a tree: roots, trunk, branches, leaves, flowers, fruits. During the radio "discussion" four points are brought out which the teacher is asked to write on the board for discussion:

1. From the <u>roots</u> plant food passes through the bark to the leaves.
2. The main work of the trunk is to carry branches, leaves, flowers, and fruits of the tree.
3. The work of the branches is to spread out the leaves in the sun.
4. Trees differ in shapes and sizes. Their roots, branches, leaves, flowers, and fruits are also different.

The discussion continues in this vein, and at the end some projects are suggested for children in looking at trees: what kinds of leaves they have, what kind of flowers, which can be used as medicine, or poles, or axe handles. Following the program, the teacher reviews the materials, asks for names, definitions. The children look sleepy and mildly bored, though with but occasional murmuring among them. A few yawn, most are patiently attentive. Then the teacher sends them outside, one group to bring young trees, another flowers, another plants

useful for medicine. At this the class comes to life. The children who have returned with medicinal plants describe what they are good for, how they are prepared. The teacher questions, jokes, "So you do not even have to go to the clinic, eh? You take the medicine from the tree." The children are interested, talking, laughing, aware of a certain ambiguity in the situation of talking about home remedies at school, especially when the teacher says jokingly things like "Aha, you are another doctor."

The real basis the children are offering for for discussion, for experimentation, for exploring the concepts of science makes the radio lesson all the more pallid by contrast. This basis was also evidenced in answers given to the series of questions about the weather in the child interview, asking what the children wondered about. Some answers were:

> 10-year-old girl: I also wonder why we have clouds when it is supposed to rain, and why it can't rain without clouds. This gives me the impression that rain is caused by clouds, but sometimes days are cloudy and it does not rain. I do not know why.
>
> 8-year-old boy: I want to know why when the wind comes it makes your body cold.
>
> 13-year-old boy: I wonder about the sun. When it rises in the morning it is cold, but by noon it becomes hot. I don't know why it becomes hot.
>
> 9-year-old boy: I have heard much about the sun. But how did they learn all that about the sun, for they say it's millions of miles away from the earth.
>
> 12-year-old girl: I want to know whether if there were no sun and moon, could there be light.
>
> 12-year-old girl: I want to know why when there is one sun and one moon, there are so many stars.

9-year-old boy: I want to know why the moon does not shine in your eyes like the sun.

10-year-old boy: I want to know why the moon does not appear sometimes.

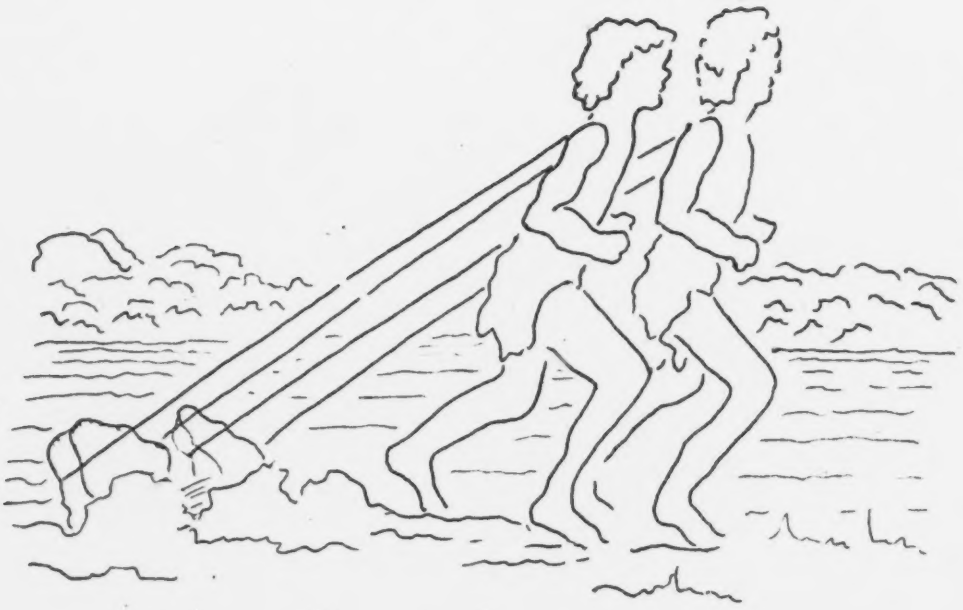
12-year-old girl: I want to know why the moon is sometimes cut in half and sometimes full.

10-year-old girl: I want to know what it is that looks like a hare on the moon.

There are new science materials being produced that begin to address themselves to such questions in terms that children can understand. However, some reading materials are more interested in moralizing than in informing, and can produce a good deal of misinformation in the process. An extreme example was just in draft when I saw it, and has doubtless been spotted by now. Dealing with the evolution of people and of society, it speaks of the invention of ploughing as follows.

> "When they had prepared the ground, they made lots of holes. While they were preparing the ground with hoes, perhaps someone discovered that it was easy to make small ditches with the hoes. People began to plant seeds in a row. They could plant seeds in rows quicker than they could plant them in holes. Gradually, people began to pull heavy stones along the ground and make long rows. They had learned how to plough fields."

The drawing below accompanied the text. Since such a "plough" obviously would not work, the import for any child who might seriously look at this picture would surely have to be either that they are stupid when it comes to learning at school, or school learning is itself meaningless and silly.



New curricula are being developed all over Africa, and exciting plans were being talked about when I left Zambia. An important part of the planning involves re-writing history texts to take account of the real events that took place both previous to European invasion and over the last some four and a half centuries. It will probably not be too long before children will not have to work through such lessons as that I hears being read both in Lusaka and a Chipata classroom: "Many years ago, there were no big roads in Africa. There were only many narrow little roads which led from one village to another.... In those days men did not travel about very much..." Hopefully, the new curricula will successfully meet the challenge: how to develop curriculum content and teaching techniques that combine the best of Zambian and Western skills and knowledge in the development of new and meaningful alternatives for education.

FOOTNOTES & REFERENCES

1. Cf. for example, Chapter 4, "Education for Docility," in Charles E. Silberman, Crisis in the Classroom, The Remaking of American Education (New York: Random House, 1970); and Chapter 8, "Golden Rule Days: American Schoolrooms," in Jules Henry, Culture Against Man (New York: Random House, 1963).

2. Some of this material is reviewed in Chapter 5 of Patricia Cayo Sexton, The American School, A Sociological Analysis (Englewood Cliffs, NJ: Prentice Hall, 1967). Historical depth is given in Paul Lauter and Florence Howe, "How the School System is Rigged for Failure," The New York Review, June 18, 1970.

3. Eleanor Burke Leacock, Teaching and Learning in City Schools; A Comparative Study (New York: Basic Books, 1969).

4. Cf. pages 4-5 of William Kessen's article, "Statement of Purposes and Objectives in Science Education in School," in Louis I.Kuslan and A. Harris Stone, Readings on Teaching Children Science (Belmont, California: Wadsworth, 1969).

5. A project funded by the Carnegie Corporation. A series of manuals have been produced by the Department of Social Sciences, Polytechnic Institute of Brooklyn.

6. The United States consumes more than one-half of the world's nonreplaceable raw materials. In the Siera Club Bulletin, September of 1965, Hugo Fischer, administrator of the Resources Agency of California, estimated that, given the current rate of growth and consumption, the U.S. in 1982 would have 9.5 percent of the world's population consuming 83 percent of all raw materials produced by the entire world.

7. This problem is discussed in my chapter, "Theoretical and Methodological Problems in the Study of Schools," in Murray L. Wax, Stanley Diamond, and Fred O. Gearing, Anthropological Perspectives on Education (New York: Basic Books, 1971), and also in my chapter, "Education,

Socialization, and 'The Culture of Poverty,'" in Annette T. Rubinstein, editor, Schools Against Children, The Case for Community Control (New York: Monthly Review Press, 1970).

8. Foremost among such critics has been Jerome S. Bruner. Cf. for example, his article, "Learning and Thinking," in the Harvard Educational Review, XXIX, No. 3 (Summer 1959).

9. John Holt, How Children Fail (New York: Pitman, 1965).

10. A point tested in their ingenious study by Robert Rosenthal and Lenore F. Jacobson, Pygmalion in the Classroom: Self-Fulfilling Prophecies and Teacher Expectations (New York: Holt, Rinehart and Winston, 1968).

11. Ivan Illich, Deschooling Society (New York: Harper & Row, 1970).

12. Some of this literature is reviewed by Ernest Drucker in his chapter, "Cognitive Styles and Class Stereotypes," in Eleanor Burke Leacock, editor, The Culture of Poverty: A Critique (New York: Simon & Schuster, 1971).

13. Nicholas DeWitt, "Some Problems of Science Education in the Developing Countries of Africa," in Kalman H. Silvert, editor, The Social Reality of Scientific Myth, Science and Social Change (New York: American Universities Field Staff, 1969), page 125.

14. H. E. Poole, "The Effect of Urbanization Upon Scientific Concept Attainment among Hausa Children of Northern Nigeria," British Journal of Educational Psychology, V. 38, 1968, pp. 57, 62.

15. This point is developed in John W. Hanson, Imagination and Hallucination in African Education (Michigan State University, n.d.).

16. Kwame Nkrumah, Neo-Colonialism, The Last Stage of Imperialism (New York: International Publishers, 1965).

17. The literature on this topic is reviewed in a United Nations Research Institute for Social Development report: Preparation of the Child for Modernization, Skills and Intellectual Requirements, by P. E. Mandl, Geneva, 1969.

18. As presented, for example, in the pamphlets of the Nuffield Mathematics Project, published in London by the Newgate Press.

19. Eleanor Burke Leacock, Teaching and Learning in City Schools, p 183.

20. Only in two classrooms were there more remarks on behavior than learning. Interestingly, these were in the same school, the small city school.

21. Cf. Idrian N. Resnick, editor, Tanzania: Revolution by Education (Arusha: Longmans of Tanzania Ltd., 1968).

22. This is one aspect of the total problem discussed by Raymond E. Callahan in Education and the Cult of Efficiency (Chicago: University of Chicago Press, 1962).

23. For a sophisticated study, although not of children, see Michael Cole, John Gay, Joseph A. Glick and Donald W. Sharp, The Cultural Context of Learning and Thinking, An Exploration in Experimental Anthropology (New York: Basic Books, 1971).

24. Such as statements by Leopold Sedar Senghor, in On African Socialism (New York: Praeger, 1964), and A. S. Touré, La Revolution Culturelle, Tome XVII, (Inprimerie Nationale "Patrice-Lumumba,"1969).

25. Examples are legion. One is M. Fortes and G. Dieterlen, editors, African Systems of Thought (Great Britain: Richard Clay, 1965).

26. Findings of the type reviewed in the UNRISD report cited in fn. 17.

27. Albert Einstein: Philosopher-Scientist, edited by Paul Arthur Schlipp (New York: Harper, 1959) p. 7; New York Times, March 27, 1972, p. 26.

28. Kessen, op. cit., p. 4.

29. Jomo Kenyatta, Facing Mount Kenya (New York: Random House, Vintage, nd.); Lucy P. Mair, An African People in the Twentieth Century (New York: Russell & Russell, 1965); May M. Edel, The Chiga of Western Uganda (New York: Oxford, 1957); Margaret Read, Children of Their Fathers (New Haven: Yale University Press, 1960).

30. Joseph A. Lijembe, "The Valley Between: A Muluyia's Story," in Lorene K. Fox, editor, East African Childhood, Three Versions (Nairobi: Oxford University Press, 1967), pp. 11-12.

31. Nuffield Mathematics Project, Beginnings (London: W & R Chambers and John Murray, 1970), p. 12.

32. Ibid., p. 34.

33. Ibid., p. 3.

34. Leacock, op. cit. 1969, p. 65.

35. Ibid., p. 68.

APPENDIX IA - SCHEDULE OF CLASSROOM OBSERVATIONS

School & Grade***	Subject (time given in minutes)							
	English*	Cinyanja	Arithmatic	Social Studies	Science	Creative Activities	Other**	Total
Lusaka Schools								
Unscheduled (A)								
Grade 2	109	27	135			51	51	373
Grade 5	8		17				7	32
Grade 6	49	30	145	22		54	40	340
Unscheduled (B)								
Grade 2	106					36	9	151
Grade 4	94			53			12	159
Grade 5	74	20	39	31	70			234
Grade 6			56	39				95
Scheduled								
Grade 2	31		54			6	62	153
Grade 4	39			35		55	8	137
Grade 5	85		20			47	11	163
Grade 6	118		20		13		17	168
Chipata School								
Grade 2		25	20					45
Grade 4	55	20					5	80
Grade 5	16		42		30		7	95
Grade 6	35		7					42
Rural Schools								
Grade 1						38	26	64
Grade 2	30		45					75
Grade 3	35	28	14	35				112
Grade 4	48						29	77
Grade 5			30		15			45
Grade 6	30		56	45	17			148
Total	16h 2m	2h 30m	11h 40m	4h 20m	2h 25m	4h 47m	4h 44m	46h 28m

* Oral English, Reading, Writing, Spelling

** Religious Instruction, Singing, Recess, Transitions

*** For breakdown of classrooms on the grade, cf. App.IIA

APPENDIX IB - CHILD INTERVIEWS

Schools	Number of Children Interviewed		
	Girls	Boys	Total
Lusaka Schools			
Unscheduled(B)			
Lower Primary	28	30	58
Upper Primary	28	31	59
Scheduled			
Lower Primary	9	13	22
Upper Primary	14	15	29
Chipata School			
Lower Primary	10	10	20
Upper Primary	10	10	20
Rural Schools			
Lower Primary	7	20	27
Upper Primary	21	20	41
Pilot Interviews			
Ages 8 - 10	30	25	55
Ages 11 - 12	40	40	80
Ages 13 - 15	21	22	43
Total	218	236	454

APPENDIX IIA - TEACHER INITIATED INTERACTIONS

School & Grade	Number per Hour		Individual vs Group		Curriculum vs Behavior	
	Number Per Hour	Total Number	% with Group	% with Individual	% pertaining to Curriculum	% pertaining to Behavior
Lusaka Schools						
Unscheduled (A)						
Grade 2a	136	648	76	24	69	31
Grade 2b	93	718	48	52	87	13
Grade 5	86	92	71	29	83	17
Grade 6	29	401	44	56	80	20
Unscheduled (B)						
Grade 2	133	699	57	43	75	25
Grade 4	140	816	65	35	90	10
Grade 5a	137	713	61	39	97	3
Grade 5b	141	302	33	67	93	7
Grade 6	93	338	45	55	88	12
Scheduled						
Grade 2a	39	19	53	47	6	94
Grade 2c	187	170	68	32	58	42
Grade 2d	240	393	71	29	60	40
Grade 4a	118	322	44	56	74	26
Grade 4d	23	47	47	53	43	57
Grade 5a	104	122	63	37	54	46
Grade 5c	90	445	57	43	77	23
Grade 6a	132	308	51	49	79	21
Grade 6c	45	174	45	55	68	32
Chipata School						
Grade 2	89	130	88	12	79	21
Grade 4	77	203	40	60	87	13
Grade 5a	88	110	57	43	70	30
Grade 5b	90	210	79	21	82	18
Grade 6	206	285	46	54	96	4
Rural Schools						
Grade 1	41	81	57	43	86	14
Grade 2	148	579	63	37	92	8
Grade 3	65	256	92	8	88	12
Grade 4	70	263	57	43	86	14
Grade 5	180	178	87	13	89	11
Grade 6	181	919	39	61	92	8

APPENDIX IIB - TEACHER RESPONSES PERTAINING TO CURRICULUM

School & Grade	% Positive Evaluation	% Opening Up, Urging	% Negative Evaluation	% Correcting, Passing On	% Neutral Acceptance	% Other
Lusaka Schools						
Unscheduled (A)						
Grade 2a	10	5	.4	4	80	0
Grade 2b	22	1	.3	7	67	3
Grade 5	0	11	0	11	68	11
Grade 6	5	25	4	11	55	0
Unscheduled (B)						
Grade 2	5	10	1	7	71	6
Grade 4	3	2	.2	6	86	2
Grade 5a	12	9	2	2	73	2
Grade 5b	15	13	3	23	45	1
Grade 6	11	9	6	7	66	1

Scheduled						
Grade 2a	0	0	0	0	100	0
Grade 2c	18	3	22	5	52	0
Grade 2d	9	18	13	5	54	1
Grade 4a	8	13	0	6	68	6
Grade 4d	11	11	0	11	67	0
Grade 5a	57	14	22	0	8	0
Grade 5c	5	6	3	20	61	4
Grade 6a	10	13	7	25	44	0
Grade 6c	12	7	0	26	49	5
Chipata School						
Grade 2	0	2	0	2	96	0
Grade 4	0	6	0	13	78	3
Grade 5a	10	13	3	19	55	0
Grade 5b	1	0	0	10	83	5
Grade 6	1	5	0	20	70	4
Rural Schools						
Grade 1	24	3	0	26	45	3
Grade 2	4	11	3	16	62	4
Grade 3	2	0	8	2	88	0
Grade 4	3	7	3	18	63	6
Grade 5	0	15	0	0	81	5
Grade 6	12	12	1	10	62	2

APPENDIX IIC - TEACHERS DIRECTIVES AND RESPONSES PERTAINING TO BEHAVIOR

	Total Number	Percent Positive	Percent Negative	Percent Neutral
Lusaka Schools				
Unscheduled (A)				
Grade 2a	100	0	11	89
Grade 2b	44	0	9	91
Grade 5	8	0	13	88
Grade 6	32	0	19	81
Unscheduled (B)				
Grade 2	84	0	17	83
Grade 4	39	0	10	90
Grade 5a	9	0	22	78
Grade 5b	10	0	50	50
Grade 6	20	0	45	55
Scheduled				
Grade 2a	16	13	50	38
Grade 2c	43	7	70	23
Grade 2d	97	0	67	33
Grade 4a	43	0	26	74
Grade 4d	12	0	58	42
Grade 5a	32	3	38	59
Grade 5c	43	2	37	60
Grade 6a	26	0	31	69
Grade 6c	27	0	15	85
Chipata School				
Grade 2	14	0	29	71
Grade 4	13	0	23	77
Grade 5a	13	0	77	23
Grade 5b	17	0	24	76
Grade 6	6	0	17	83
Rural Schools				
Grade 1	6	0	34	66
Grade 2	15	0	0	100
Grade 3	15	0	13	87
Grade 4	8	0	25	75
Grade 5	10	0	40	60
Grade 6	34	0	15	85

APPENDIX IIIA - CHILD QUESTIONAIRE

1. I would like to find out what boys and girls do when they are not in school. What do you like to do best?
2. How do you play (do) it?
3. What else do you do? How?
4. What else? Tell me about it. (If child talks about making something, like a "car," ask where he gets the parts, and keep on asking about what he or she does.)
5. What would you like to do that you can not do already? What else?
6. Do you like going to school?
7. Why?
8. What do you like most about school?
9. What else do you like about school?
10. What would you like to do in school that you don't do already?
11. What else?
12. How long do you want to keep on going to school?
13. What do you want to do when you grow up? (What work?)
14. Will school help you do that?
15. How? (If child answers "by learning," ask "Learn what?" Write down both answers.)
16. How else will school help you?
17. What does your teacher want you to do in school?
18. What else?
19. Why does she (he) want you to do that?
20. When children do what the teacher wants, what does she (he) do then? (If child's answer is too general, ask for more details, asking "How?" or "What do you mean?" Write down both answers.)
21. What kinds of things make the teacher angry?
22. What does she (he) do then? (If child answers "punish" ask "How?")
23. Some people are very wise. Tell me, who is the wisest person you know? Who is that? (If the answer is the teacher, ask "Who else?" Write down both answers.)
24. What kinds of things does he (she) know?
25. What else?
26. How can you become wise like him (her)? (If answer is by going to school, ask, "What else?" Write both answers.

27. What kinds of things do you want to know about when you grow up?
28. What else?
29. There are so many things to know about. What else would you like to know when you are older?
30. How can you learn these things? (If answer is, in school, ask "How else?" Write down both answers.)
31. This morning it was cold and now it is warmer. Some days the sun is out and sometimes it rains. Do you ever wonder why?
32. What do you think causes the rain?
33. How can you find out about things like that?
34. What other things would you like to understand? (If child answers, nothing, say, "Think a while. There must be some things." Write both answers.)
35. What else? (If child is interested, keep asking him what he thinks about.)
36. How will you find out about these things? (If child answers, at school, ask, "How else?" Write both answers.)

APPENDIX IIIB - CHILD QUESTIONAIRE, CINYANJA

1. Ndifuna kuziwa cimene anyamata ndi atsikana acita atacoka ku sukulu. Kodi ndi ciani cimene mukonda kopambana monga zo sewela-sewela?
2. Kodi mumasowela bwanji?
3. Kodi ndi masewela woti ena? Ndipo musowela bwanji?
4. Kodi ndiciana cina? Ndiuzeni zazimenezi. (Ngati mwana akamba monga zopanga-panga, monga "Motokali," funsani kumene achotsa zopangila ndi mmene iye apangila.)
5. Kodi ndizinthu monga ziti zimene siunacitepo kale? Ndi ziti zina?
6. Kodi umakonda kupita ku sukulu?
7. Chifukwa?
8. Kodi ndiciani cimene ukonda pa sukulu?
9. Kodi ndiciani cina cimene ukonda monga za m'sukulu?
10. Kodi ndiciani cimene ufuna kucita pa sukulu cimene siunacitepo?
11. Ndiciani cina?
12. Kodi kwasala zaka zingati ukali kuphunzila?
13. Kodi utakula uzagwila nchito yotani?
14. Kodi sukulu izakuthandidza kupeza nchito imeneyo?
15. Izakuthandiza bwanji? (Ngati mwana yankho yace "kuphunzila," funsani "Kuphunzila kotani?" Ndipo lembani mayankho ace awiliwo.)
16. Kodi ndiciti cina sukulu ingakuthandize?
17. Kodi aphunzitsi ako afuna kuti muzicita ciani m'sukulu?
18. Ndiciti cina aphunzitsi ako afuna?
19. Kodi ndiciani aphunzitsi afuna kuti uzicita zimenezo?
20. Ngati ana acita cimene aphunzitsi afuna, kodi iwo a-phunzitsi acita ciani pamkuyo pace? (Ngati mwana yankho yokuti cabwino kwambiri funsansoni zina zachenso, "Kuti bwanji," nanga "Utanthauza ciani?" Ndipo lembani mayankho awiliwo.)
21. Kodi aphunzitsi nthawi ina amakalipa ndizotani?
22. Kodi acita ciani pambuyo pace? (Ngati mwana ati "cilango", funsani "cilango cotani?")
23. Athu ena ndi anzeru. Ndiuzeni munthu amene muziwa ali ndi nzeru? Kodi ndani? (Ngati yankho ndi a-phunzitsi, funsani "Ndani wina?" Lembani mayankho awiliwo.)
24. Kodi iwo anzeru anacitapo ciani, coti muwaganizile

kuti ndi anzeru?

25. Ndi ciani cinanso?
26. Kodi mungakhale bwanji ndi nzeru monga iwo? (Ngati yankho ndi kupita ku sukulu, funsani "Ndiciani cina." Ndipo lembani zoyankhidwazo ziwili.)
27. Kodi ndizinthu zotani zimene ufuna kuziwapo utakula?
28. Ndiziti zina zinthu?
29. Zoziwapo ndizambiri. Kodi ndi ziti zina zimene ufuna kuzaziwa pamene utakula?
30. Kodi munga ziphunzile lewanji zinthuzi? (Ngati yankho ndi pa sukulu, funsani "Munjila yotaninso?" Ndipo lembani zimene azayankha ziwili.)
31. M'mawa kunali kuzizila ndipo tsopano kwakhala ko fundako. Matsiku ena dzuwa simaoneka ndipo nvula ikugwa. Kodi siudadwapo kanthu?
32. Kodi uganizila kuti cimabweletsa nvula ciani?
33. Kodi ungapeze bwanji zinthu zili monga zimenezi?
34. Kodi ndizinthu monga izi zotani zimene ufuna kuziwa? (Ngati mwana yankho yake ati palibe "Aganize pa ka nthawi. Kuyenela kukhala zinthu zina." Ndipo mulembe mayankho ace awili.)
35. Kodi ndiciani cina? (Ngati mwana cimamkondwetsa, funsani zimene aganizilapo pa izi.)
36. Kodi ungazipeze bwanji zotelezi? (Ngati mwana atipa sukulu, funsani "Ndikuti kwina?" Ndipo lembani mayankho ace awili.)

APPENDIX IIIC - CHILDREN'S PERCEPTIONS OF T'S LIKES AND DISLIKES - GIRLS

	Behavior		Work		Other		Total	
	no.	%	no.	%	no.	%	no.	%
Lusaka Schools								
Unscheduled B								
Lower Primary								
Likes	9	32	17	61	2	7	28	100
What Else?	7	25	14	50	7	25	28	100
Dislikes	23	82	5	18	0	0	28	100
Upper Primary								
Likes	8	29	20	71	0	0	28	100
What Else?	13	46	14	50	1	4	28	100
Dislikes	21	75	7	25	0	0	28	100
Scheduled								
Lower Primary								
Likes	1	11	7	78	1	11	9	100
What Else?	5	56	2	22	2	22	9	100
Dislikes	7	78	2	22	0	0	9	100
Upper Primary								
Likes	6	43	8	57	0	0	14	100
What Else?	3	21	7	50	4	29	14	100
Dislikes	10	71	3	21	1	7	14	99
Chipata School								
Lower Primary								
Likes	4	40	6	60	0	0	10	100
What Else?	2	20	5	50	3	30	10	100
Dislikes	8	80	0	0	2	20	10	100
Upper Primary								
Likes	8	80	2	20	0	0	10	100
What Else?	0	0	4	40	6	60	10	100
Dislikes	10	100	0	0	0	0	10	100
Rural Schools								
Lower Primary								
Likes	1	14	6	86	0	0	7	100
What Else?	2	29	2	29	3	42	7	100
Dislikes	4	57	2	29	1	14	7	100
Upper Primary								
Likes	8	38	12	57	1	5	21	100
What Else?	7	33	10	48	4	19	21	100
Dislikes	13	62	3	14	5	24	21	100

APPENDIX IIIC - CHILDREN'S PERCEPTIONS OF T'S LIKES AND DISLIKES - BOYS

Lusaka Schools	Behavior no.	%	Work no.	%	Other no.	%	Total no.	%
Unscheduled B								
Lower Primary								
Likes	3	10	26	87	1	3	30	100
What Else?	9	30	21	70	0	0	30	100
Dislikes	25	83	5	17	0	0	30	100
Upper Primary								
Likes	7	23	23	74	1	3	31	100
What Else?	13	42	15	48	3	10	31	100
Dislikes	23	74	8	26	0	0	31	100
Scheduled								
Lower Primary								
Likes	3	23	9	69	1	8	13	100
What Else?	7	54	2	15	4	31	13	100
Dislikes	12	92	0	0	1	8	13	100
Upper Primary								
Likes	1	7	13	87	1	7	15	101
What Else?	8	53	4	27	3	20	15	100
Dislikes	15	100	0	0	0	0	15	100
Chipata School								
Lower Primary								
Likes	3	30	7	70	0	0	10	100
What Else?	5	50	1	10	4	40	10	100
Dislikes	8	80	1	10	1	10	10	100
Upper Primary								
Likes	5	50	5	50	0	0	10	100
What Else?	5	50	4	40	1	10	10	100
Dislikes	10	100	0	0	0	0	10	100
Rural Schools								
Lower Primary								
Likes	3	15	16	80	1	5	20	100
What Else?	3	15	9	45	8	40	20	100
Dislikes	12	60	8	40	0	0	20	100
Upper Primary								
Likes	6	30	14	70	0	0	20	100
What Else?	4	20	10	50	6	30	20	100
Dislikes	13	65	5	25	2	10	20	100

APPENDIX IIIc - CHILDREN'S PERCEPTIONS OF T'S LIKES AND DISLIKES - GIRLS & BOYS

	Behavior		Work		Other		Total	
	no.	%	no.	%	no.	%	no.	%
Lusaka Schools								
Unscheduled B								
Lower Primary								
Likes	12	21	43	74	3	5	58	100
What Else?	16	28	35	60	7	12	58	100
Dislikes	48	83	10	17	0	0	58	100
Upper Primary								
Likes	15	25	43	73	1	2	59	100
What Else?	26	44	29	49	4	7	59	100
Dislikes	44	75	15	25	0	0	59	100
Scheduled								
Lower Primary								
Likes	4	18	16	73	2	9	22	100
What Else?	12	55	4	18	6	27	22	100
Dislikes	19	86	2	9	1	5	22	100
Upper Primary								
Likes	7	24	21	72	1	3	29	99
What Else?	11	38	11	38	7	24	29	100
Dislikes	25	86	3	10	1	3	29	99
Chipata School								
Lower Primary								
Likes	7	35	13	65	0	0	20	100
What Else?	7	35	6	30	7	35	20	100
Dislikes	16	80	1	15	3	15	20	100
Upper Primary								
Likes	13	65	7	35	0	0	20	100
What Else?	5	25	8	40	7	35	20	100
Dislikes	20	100	0	0	0	0	20	100
Rural Schools								
Lower Primary								
Likes	4	15	22	81	1	4	27	100
What Else?	5	19	11	41	11	41	27	101
Dislikes	16	59	10	37	1	4	27	100
Upper Primary								
Likes	14	34	26	63	1	2	41	99
What Else?	11	27	20	49	10	24	41	100
Dislikes	26	63	8	19	7	17	41	99

APPENDIX IIID - CHILDREN'S STATED OCCUPATIONAL GOALS - GIRLS

Goals	Lusaka Schools							
	Unscheduled B				Scheduled			
	Lower Primary		Upper Primary		Lower Primary		Upper Primary	
	no.	%	no.	%	no.	%	no.	%
Professional, Artist	0	0	0	0	0	0	0	0
Clerical, Teacher, Nurse, Stewardess	23	82	28	100	6	67	8	57
Service, Factory, Mechanic	2	7	0	0	1	11	1	7
Public Service, Army, Police	1	4	0	0	0	0	1	7
Wife, Domestic	1	4	0	0	0	0	0	0
Farming	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0
N.A., D.K.	1	4	0	0	2	22	4	28
Total	28	101	28	100	9	100	14	99

APPENDIX IIID - CHILDREN'S STATED OCCUPATIONAL GOALS - GIRLS

Chipata				Rural Schools			
Lower Primary		Upper Primary		Lower Primary		Upper Primary	
no.	%	no.	%	no.	%	no.	%
0	0	0	0	0	0	0	0
10	100	9	90	5	71	16	76
0	0	0	0	0	0	0	0
0	0	1	10	1	14	3	14
0	0	0	0	1	14	1	5
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	5
0	0	0	0	0	0	0	0
10	100	10	100	7	99	21	100

APPENDIX IIID - CHILDREN'S STATED OCCUPATIONAL GOALS - BOYS

Goals	Lusaka Schools							
	Unscheduled B				Scheduled			
	Lower Primary		Upper Primary		Lower Primary		Upper Primary	
	no.	%	no.	%	no.	%	no.	%
Professional, Artist	2	7	0	0	1	8	3	20
Clerical, Teacher, Nurse, Steward	6	20	9	29	2	15	0	0
Service, Factory, Mechanic	13	43	11	36	2	15	5	33
Public Service, Army, Police	4	13	1	3	2	15	0	0
Pilot, Engineer	4	13	6	19	5	38	4	27
Farming	0	0	1	3	0	0	0	0
Other	0	0	1	3	0	0	1	7
N.A., D.K.	1	3	2	7	1	8	2	13
Total	30	99	31	100	13	99	15	100

APPENDIX IIID - CHILDREN'S STATED OCCUPATIONAL GOALS - BOYS

Chipata				Rural Schools			
Lower Primary		Upper Primary		Lower Primary		Upper Primary	
no.	%	no.	%	no.	%	no.	%
2	20	0	0	0	0	3	15
4	40	1	10	3	15	5	25
0	0	2	20	6	30	8	40
1	10	1	10	9	45	1	5
0	0	5	50	1	5	0	0
0	0	0	0	1	5	2	10
0	0	0	0	0	0	1	5
3	30	1	10	0	0	0	0
10	100	10	100	20	100	20	100

APPENDIX IIIE - EXAMPLES OF CHILD INTERVIEWS

Number 1 - Boy, Age 12, Rural Upper Primary, Sixth Grade

1. When I come from school, I like to play hide and seek.
2. If you are four, two remain and some go to hide. When they have hidden, they start seeking. When they see you, they themselves go to hide.
3. N.A.
4. I like to make clay cows. We go to the dam to get clay. Then we make them and put them in the sunshine to dry. When they are dry, I play with them.
5. I have never taught my friends. I have never ploughed with cows, or worked at the job of clerk.

5a. I like to help my parents. When I reach home they like to send me to lock the cattle in their kraal. Since I come late, that's why I take the cattle to their kraal. When I have taken the cattle to their kraal, then they send me to take the goats. When I have locked in the goats, I go home.

6. Yes.
7. Because I want to learn.
8. What I like here at school is to learn to write and read.
9. In the classroom, I like to write. Writing, like science, religious knowledge, English, math and geography.
10. What I have not yet done is to learn to reach grade seven. I have not yet done grade seven sums.
11. N.A.
12. Five years.
13. When I grow up, I shall get employment teaching.
14. Yes.
15. It can help me, because you can't get employment teaching if you don't learn. Now if I learn, school is going to help me be a teacher because I will know everything.
16. The other way school can help me is--like if I want to go somewhere, and someone says there are signs and I don't know how to read, I get lost. But if I know how to read, I know that this way is mine, or that is, or maybe it's not mine. I can know then how it is.

17. He wants me to obey him, and learn geography, science, English, gospel and vernacular.
18. N.A.
19. He wants me to obey him so that I can have peace in the future.
20. He gets pleased; he says you have done well because you obey me. You will share my knowledge so that you can have peace in the future.
21. What he gets angry with is bad things like staying away from school. Sometimes a teacher sends you to do work like on the driveway and you have not done it, or sometimes you fight at school with your friends. Then the teacher gets angry.
22. He gives you a punishment. A punishment like to dig a toilet or to cut firewood.
23. It's Mr. N.
24. He is bright, because he reached form four. Since he reached form four now he is not poor. Because he knows how to read and write, he got a high rank.
25. N.A.
26. I can be like him if I obey. If you obey, sometimes you can have a lucky future.
27. I want to know how to write and read, to write lessons like geography, English, and other things, and to read everything well.
28. N.A.
29. N.A.
30. By learning them.
31. I wonder, because if there is sun a person is happy, but if there is no sun, he shivers.
32. Because when water here on earth evaporates, it goes up to heaven and makes water. Then it comes down in rain again when rain forms.
33. Because; when it is the dry season, when there is so much sun, the water which is in ponds and streams gets dry. That's why I believe it goes to heaven to form water.
34. N.A.
35. I am surprised by how water does evaporate. By how it gets hot and evaporates, and forms rain.
36. Especially what I want to know is why, when you see the water get dry, how, when the yearly rainy season comes, it rains again. Especially what I want to know is why sometimes in the sky there are no

clouds; yet if there is no water [on the land] then in heaven there is water. But if there are no clouds in the sky, there is no water. Water is taken here from the earth to go to form clouds there, and then they form rain.

Number 2 - Boy, Age 13, Urban Upper Primary, Fifth Grade
(short answer form - not taped)

1. When I come from school I like to play football.
2. I like to play in the park on the seesaw.
3. We like to play touch. We chase someone and when you hit him with a ball, he is the one who is going to chase us.
4. I like to make wire cars. I take the wires in the compound.
5. I have never ridden a horse or a motorcycle.
6. Yes.
7. Because I want to be educated.
8. At school I like trees because they give us shade.
9. In the class I like history, science, vernacular, and social studies.
10. At school I want to play football because I have never played football at school.
11. I want also to play volleyball.
12. There are seven years left.
13. When I grow up I shall be a driver of a train
14. Yes.
15. It will help me to be educated so that I can work at a good job.
16. School can help me to get a certificate from the Young Farmers Club.
17. The teacher wants us to write vernacular, English, arithmetic, and science.
18. The teacher doesn't want insulting in the classroom.
19. Yes.
20. The teacher gets pleased when we get her what she asks for.
21. The teacher sometimes gets angry if we fight and make noise in the classroom.
22. She beats us with a ruler.
23. I know J. I learn with him.
24. J knows how to write arithmetic
25. He also knows about social studies.
26. I can be clever if I understand what the teacher says.

27. When I grow up I want to know how to hoe cotton.
28. I want also to know how to hoe groundnuts and maize.
29. When I grow up I want to know how to drive a car.
30. I can learn them if I take a course.
31. I am surprised by the sun. When it rises in the morning, there is cold; when it is noon time it becomes hot. Now I don't know why it becomes hot.
32. I think what brings the rain is clouds.
33. I can know about the sun that when it is too hot rain will fall.
34. I want to know about the stars--whether they are big or small.
35. I want also to know about the sun whether it is bigger than the moon.
36. I can learn these things at school and at the university.

Number 3 - Girl, Age 12, Town Lower Primary, Fourth Grade

1. We play football and making a circle and other games.
2. We get small stones, and put them in a circle. In the middle we put a person and then divide ourselves. One group stays on each side in a sort of a circle. One group throws a ball and if you do not catch it, then you start to run around. But if they happen to catch it, then it is their chance to throw the ball.
3. Make cakes and scones. We get flour, yeast, sugar and margarine, then salt. After getting all these we put them in one dish, then cover it until it is thick enough. After that we put it in the stove. After they have been baked we take them out.
4. N.A.
5. Work, for example teaching, I have never done it.

5a. (At home) I sweep the house, dust up the furniture, wash the dishes, go to the market to buy fish. Then if it is about time for me to go to school, I prepare food and then eat.

6. Yes.
7. I want to learn because I am not fully educated, I want to be highly educated and then start teaching.
8. Listening to teachers. If they tell you,"Do this," you ought to do it, because if you don't do it, it seems as if you are ignoring the instructions given by the teacher.

9. Arithmetic, English, social studies, vernacular.
10. If they tell you to go to play, you must go. If you are told to go and play football, you ought to go. I would like to learn other subjects that I have never learned before.
11. N.A.
12. I don't know, but I have three more to go before beginning secondary education. I therefore have five years more, because I will stop in form two.
13. I want to work teaching.
14. Yes.
15. Because when I stop schooling, I will take a teaching course. Then I shall become a teacher, and shall be paid at the end of each month. Then I shall have to help my parents who have helped me.
16. N.A.
17. If you are given sums to write, you ought to think first, then write correct answers. And you have to respect the teachers. If they tell you to do something, you ought to do it, because if you do this, your parents will also be happy with you, and always tell you that you are a good girl because you do what teachers tell you to do.
18. N.A.
19. Because they want us to do anything that they tell us to do.
20. He says,"Thank you" for doing what you are told to do by the teacher.
21. If we have not done what they want us to do, this makes them get annoyed.
22. Sometimes they whip us all with a duster or ruler.
23. I know J. He is very bright. Last year he was first (in the class). It is likely that he will be again
24. N.A.
25. N.A.
26. To be wise, I ought to think well. If the mistress has given you English to do, you ought to write correct answers. If it is arithmetic, I must write correct answers. When she marks them I revise them together with J.
27. I want to know how to show respect, how to respect old people. If they send you to do something for them, you ought to do it.

28. N.A.
29. N.A.
30. N.A.
31. I wonder why the rivers get filled up with water, so that sometimes you can hardly see the bridges.
32. What brings rain is clouds. If it is during the rainy months, it ought to rain well.
33. N.A.
34. N.A.
35. What interests me is rain because it gives us water to drink and it helps our gardens to keep moist. We use it; it helps us a lot.
36. N.A.

Number 4 - Girl, Age 13, Rural Upper Primary, Sixth Grade

1. I like dancing Cimutale and Citelele.
2. We do it in an old fashioned way. We stand and clap hands and dance,
3. N.A.
4. I don't make anything.
5. If I pass, I want to go to secondary school.
5a. After school I cook relish, sweep the house and draw water.
6. Yes.
7. Because I want to learn.
8. I like netball and working.
9. I like arithmetic and English.
10. To be in a netball team because I am not in a netball team now.
11. N.A.
12. I don't know.
13. As a nurse.
14. Yes.
15. If you do not go on you are given a certificate. Then you get a job and make money.
16. Or to help to develop the country, for example by running a chicken farm.
17. When he talks, we must listen to what he is saying.
18. When he is teaching, I must concentrate on what he is saying.
19. Because that is what we came here for. So that we learn what he is saying.

20. If you understand, then he tells you that you are doing well.
21. If he tells you to memorize something, and if you don't memorize it, he is annoyed.
22. Sometimes he wants to beat us, but he forgives us. But sometimes he beats us with a ruler.
23. Grown people are wise.
24. When they know that this will be a starving year, they make gardens.
25. When it is time for us to go to school, they buy us uniforms.
26. So long as I observe what they do.
27. If I get a job and start helping people, I shall therefore be lifting my tribe up.
28. N.A.
29. N.A.
30. N.A.
31. I am surprised by how the clouds are formed.
32. Clouds. (After probing question): God.
33. When it is time for the rain to fall.
34. Rain.
35. Because it makes us survive by helping crops grow.
36. N.A.

APPENDIX IV - PARENT INTERVIEW

1. I want to ask about bringing up children. What do you find to be problems bringing them up in _____?
2. What are some of the good things about bringing up children in _____?
3. What do you think are the most important things parents should teach children? (If person does not say much, ask) What else?
4. Until what grade do you plan for your children to go to school? (List for different children, boys and girls; first and later born.)
5. What do you think your children will do when they grow up? (List for different children, boys and girls; first and later born.)
6. Do your children learn much from playing with other children when they are young? What kinds of things do they learn?
7. Do your children ask many questions when they are young? What do you do when they ask questions?
8. What happens when your children need help in their homework?
9. How do you like the schools your children are now going to?
10. Are you active in any Parent Teachers Association? What kinds of things does it do?
11. Are you an active member of any other group working to improve the community? What kinds of things does it do? What other improvements do you think are needed? How could these improvements be made?
12. Do you belong to any other group, such as a church choir, sports group, or other social club? What kinds of things do they do?

APPENDIX V - TEACHER INTERVIEW

1. I would like to ask you about the children in your class. What are their backgrounds? (For example, from Lusaka or outside; tribal affiliations; occupations of parents).
   [For teachers in rural areas: I would like to ask you about the children in your class. Are their fathers all farmers? (If no): What else do they do? What villages are the children from?]
2. a.How well are the children doing with their lessons?
   b.About how many of the children in your class do you think will go to _____? (further schooling)
   c.What do you think the others will do when they finish school?
3. What do you think are the main things the children should be getting out of school? (Any difference between those who go on and those who do not?)
4. a.What do you do about a child who is doing very poor work?
   b.Can you give me an example of what you do?
5. a.Who are the outstanding students in your class?
   b.In what ways are they outstanding?
6. a.Who are some of the difficult students?
   b.Will you please explain to me the ways in which they are difficult?

About the organization of the classroom:

7. a.Is your classroom divided into fast and slow groups?
   b.How do you decide which children to put into each group?
   c.How often do you move children from one group to another?
   d.Can you give me an example of a particular child you have moved?
8. a.How many monitors (or captains) do you have?
   b.Which children are captains now?
   c.What are their duties?
   d.How are they chosen?
9. a.What are your rules for classroom behavior?
   b.Are there times when the children are allowed to talk? (When?)
   c.Do you allow them to move around?

d.What do you do to keep the children good?
e.Do you punish them often?

About the curriculum:

10. a.Do you use the English Medium manuals?
b.Are they good for all subjects?
c.Are there times you find it better to make your own lesson plan for these children?
d.How do you think the manuals could be made better?
e.Have you always used the English Medium manuals?
f.(if the answer is no): What were some of the differences about teaching the old way?
11. a.Do you think any of the things the children do out of school help them in their lessons?
b.Do some things children do out of school make it hard for them to learn?
c.Do the children understand the pictures and the stories in the books they use at school?
d.Are there some ways in which you think these books could be better?

About the parents:

12. a.Do the parents of most children in your class show an active interest in the school?
b.In what ways?
13. a.Do you ever call a child's parent in for consultation when there is some problem?
b.(If he has not given an example) Can you give me an example?
14. a.(If there are groups in the classroom) Do parents ever say anything about their child being in the slow group in the classroom?
b.Can you give me an example?

About the teacher:

15. Where did you receive your own training?
16. Do you like teaching here?
17. Do you like teaching children of this grade?
18. Before we finish, is there anything else you would like to tell me about your program, or about your class?

Many thanks